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A JOURNAL DEVOTED
 TO BEES
 AND HONEY
 AND HOME
 INTERESTS.

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No. 17.

FROM DR. C. C. MILLER.

"TOP SWARM" is a common name in England for a prime swarm.

MY PERCOLATOR was started running Aug. 9. Some of my bees shall be ready for winter.

J. A. GREEN is mentioned in the Chicago papers in connection with a bicycle robbery.

A GOOD PICTURE of Hon. Eugene Secor, as also an article from his pen, appears in *The Midland Monthly*.

THE LIME, or linden, in England, the *B. B. J.* says, is "a precarious and uncertain source of supply at the best."

A HAPPY DISPOSITION, Dr. Peiro says in *A. B. J.*, is one of the best things to dispel disease. I'm going to get one.

SWEET CLOVER seems to have a new use. Mrs. Dunkin, in *A. B. J.*, says it will keep moths out of woolen goods.

QUEENS are quietly superseded after the close of the honey season much oftener than one who never clips his queens would think.

ONE POUND VS. TWO-POUND sections. Replies in *A. B. J.* agree that very little more honey can be obtained in two-pounds than one-pounds.

POLLEN seems to be gathered, not in exact proportion to nectar. My bees have combs empty of honey, but are laying up a good stock of pollen.

SOMETIMES I've had queens lay in worker-combs in sections when there was no excuse for it, but not often enough to make it worth while to use excluders.

MR. EDITOR, please don't let Prof. Cook write any more pieces like that on p. 651. I don't want to become discontented with the place where I'm now living.

EVIDENTLY the editor (see bottom of p. 661) doesn't want to be considered "an ordinary greenhorn around the bees." And yet he'd be mad if you called him an extraordinary one.

DOOLITTLE figures, in *A. B. J.*, that a good queen during her lifetime lays on an average about 729,000 eggs. He had one that averaged more than 4000 daily for two months.

NO, INDEED! You're fooled if you think only beginners read that department of Doolittle's. I don't dare to skip a word of it for fear he gives some kink that I don't know.

PORCHES entirely inclosed with wire cloth are coming into fashion. Make a nice place to sit, free from flies and mosquitoes. Wouldn't it be as good as a bee-tent to manipulate bees?

WHEN COMBS have become old and black, they are not worth melting for wax.—*British B. J.* Wonder if they have real good sun-extractors over there, or doesn't the sun shine enough?

C. A. HATCH thinks that prolificness of queen is of less consequence than vitality of offspring, and that crowding the queen beyond her natural wont, by spreading the brood, may be at the expense of that vitality.

"INSOMNIA," says Dr. Peiro, "sounds very distinguished; but when a person can not enjoy good rest there is usually something the matter not exactly to his credit." I don't think much of York's doctor.

THE RUSSIAN CHURCH, backed by the government, has decreed that hereafter only pure beeswax shall be used in church candles. That means a higher price for foundation, for enormous quantities of candles are used.

THE YOUNG QUEEN, says Trætzmueller in *Bienen-Vater*, at 3 days old, comes to the entrance and takes a look around without flying. Next day she takes a flight to mark the location. Not till the following day does she fly to meet the drone.

MRS. ATCHLEY says, in *A. B. J.*, that if ever Doolittle and I get non-swarming bees they're likely to be worthless. Now I know what's the matter with my honey crop this year. My bees haven't swarmed once, and so I haven't got any honey.

TO A QUESTION in *A. B. J.*, the veterans reply almost unanimously that bees secrete wax when fed on sugar syrup about as well as when

fed on honey. That doesn't agree very well with the theory that bees get wax directly from the outside covering of pollen.

TO STOP A FELON, stick the finger into a bottle of tincture of iodine for a minute, night and morning, and begin as soon as you hurt yourself.—*Dr. Peiro, in A. B. J.* Scalding hot water's good too.

THAT DOCTRINE, "where bees commence to store, there they will continue," is sometimes crowded too far. Don't bees *always* commence storing in the brood-chamber? Did you ever know them to store in sections with *no* honey in the brood-combs?

THAT TEXAS STORY about finding honey in a petrified tree has crossed the sea, and that stubborn German, Reepen, refuses to credit it because petrification takes thousands of years, and bees have been here only 200 years. The idea of objecting for a little thing like that!

THEORY is one thing, practice sometimes another. A worker cell is $\frac{1}{2}$ of an inch across, so I thought that, by cutting out a strip of foundation $\frac{1}{2}$ of an inch wide the cut parts would just fit together. Actually measuring, I find it requires a strip nearly twice as wide—.355 of an inch.

LOCK YOUR BICYCLE when leaving it standing. A regular system of bicycle robberies is being carried on. The thief mounts a bicycle standing on the sidewalk, or hires one for a short time from an agent, runs to the next station and ships it to Chicago, then disappears. J. A. Green was victimized, as mentioned above, but got back his wheel.

DANDRUFF comes from irritation by sharp-toothed combs. To cure, apply vaseline, best with a sponge, every third day for about four times. Men use a brush, women a wide-tooth comb ground very dull. When dandruff is pretty well gone, wash head daily in clear cold water, and rub scalp briskly with finger-ends, *not* nails.—*Dr. Peiro in A. B. J.*



THE NORTH AMERICAN.

THE OLD QUESTION OF AFFILIATION; HOW A
LARGE ATTENDANCE MAY BE SECURED
AT THE NEXT MEETING.

By Pres. E. T. Abbott.

The articles of incorporation of this Association (which it would not be a bad idea for all the bee papers to publish in full), adopted at Keokuk, says: "This Association shall consist of its officers, life members, delegates from affiliated local associations, and ex-presidents."

They then set forth the conditions on which bee-keepers may become life and annual members, and say that "delegates from affiliated local associations shall be admitted free." It is further stated that any "State, District, Territory, or Province in North America may become affiliated upon the annual payment of \$5.00, which shall be due on the first day of January in each year, in advance."

I should like to learn how many there are of these "affiliated" associations at the present time. I see a list of eight is given in the report of the meeting at Keokuk; but I find nothing in the last annual report to indicate that there were any "affiliated" associations at that time. If not, why not? Then, again, what benefit is to be derived from becoming "affiliated"? These are merely questions thrown out to provoke an expression of opinion, if possible, on the part of our leading bee-keepers.

It is a truth which no one can gainsay, that it is human nature not to remain "affiliated" very long when no benefit of any kind is to be derived from the affiliation. I can see how every individual who attends a meeting of the North American can be greatly benefited; but I confess I do not see where the benefit is to accrue to those who are only "affiliated" and never attend any of the meetings. It seems to me that it ought to be possible to identify the interest of all local societies more closely than they are at present with that of the national. I do not know just how this can be done; but I want to suggest a plan by which I think it could be brought about at our next meeting in October. I should like very much to see this the largest meeting that was ever held in the interest of apiculture on this continent. This can be done with very little effort, if we all set about it at once in the right way.

I would suggest, first, that every county in the United States, where there is a sufficient number of bee-keepers, organize at once a local society. Let each member pay in a fee of 50 cts., and then proceed to elect a delegate to the North American, and equip him with money enough to pay his expenses, and the \$1.00 for the annual membership-fee. Discuss thoroughly what you would like to have him present to the North American, and send him out instructed to vote every time for the thing that comes nearest representing what the local society desires. As part pay for the benefit this delegate is to derive personally from attending the North American, he should be required to write up fully the entire trip and the doings of the North American, and present this to the next meeting of the local society. Our Canadian friends should do the same in every province in Canada. In this way we could secure a very large attendance and create sufficient enthusiasm to put the North American in a way to be a power in the land. What

say you? What county or province will be the first to respond to this proposition?

I am making local arrangements for a big crowd and a good time generally. The Commercial Club, of the city, has come to the front and tendered me the use of their rooms in which to hold our meetings, and they are doing all they can to help secure reduced rates on the railroads. Just as soon as the matter of rates is settled, it will be published; but I trust no one will wait for this before making up his or her mind to come. The Commercial Club has one of the finest rooms in the city, centrally located, and near to good hotels which have made me liberal rates for our meeting.

We have been promised papers from some of the leading bee-keepers of the world. Mr. Benton is working hard to prepare a good program—one that will be both entertaining and profitable. Dr. Miller, and a host of others who are a whole convention in themselves, will be here, and the meeting can not fail to be beneficial to all who may attend. If you have but one colony, come and learn how to care for more.

Friend Stilson struck the right key in the last *Nebraska Bee-keeper*. He says, "Let's make up a carload or more and start from Lincoln." That's the way to talk. Come on with your carloads, and this city of the "wild and woolly West" will try to do her part.

I have received a number of letters and cards from those who expect to be here, but still there is room for more. Let them come, and come fast! Every one counts, and helps to swell the swarm of bee-keepers that will be buzzing in the air in our fair city Oct. 16, 17, and 18, 1894. We will furnish the hive if the people will only swarm.

St. Joseph, Mo.

[The present constitution of the North American was drawn up by Thomas G. Newman as chairman of a committee appointed for that purpose: and, if we are correct, it was modeled by him after the constitution of the very successful national association in England. The instrument was adopted without discussion at the meeting in Columbus, O., somewhat to the disappointment of Mr. Newman, who felt that so important a matter as a constitution should be carefully gone over in open convention before actual adoption. But we all thought then, that what had been a working success in England ought to be largely so in the United States; but we did not then contemplate the vast area of our own land compared with that of the mother country; and while it was quite feasible and possible to send delegates from affiliated associations to the national association, in Great Britain, it was an altogether different matter in the United States. Bee-keepers, in order to attend their national association, are obliged to go 100 miles here where those in England go one to attend their own: hence many of the advantages that would accrue from affiliation proved in the light of the past to be almost a dead letter in this country. For instance, one benefit to an affiliated society was in sending a delegate, said delegate having the privilege of a vote; but the

affiliated association, besides paying the \$5.00 fee, found it to be quite a burden to pay this amount on top of the delegate's traveling expenses. Another benefit was the awarding of medals on the part of the North American, on honey exhibited by a member or members of an affiliated association, and at the same time the appointment of a judge. But here, again, the large mileage prevented the judge from making his appearance. Indeed, we can not remember whether a judge was ever appointed.

These matters have been brought up before; and it would seem that the constitution should be amended, making fees for affiliation at a nominal sum of, say, 50 cts. or \$1.00; and that the benefits that are supposed to accrue from affiliation, and are inoperative, either be stricken out, or so modified in the constitution as not to be a dead letter.

We are heartily in accord with Pres. Abbott's scheme for securing a large attendance; but somehow our faith is not very strong that such attendance will be secured this year. The scheme is all right, and we sincerely hope the various associations will avail themselves of the plan.

All other national associations are in some way connected with local associations; and it is usually customary for the latter to pay the expenses of a delegate to the national meeting. This would secure, as Mr. Abbott points out, a large attendance at the national meeting; would divide the expense, and a good delegate would bring back plenty of enthusiasm and lots of information to the members of his local association. Here, indeed, would be substantial benefit; and, with only a nominal sum as an affiliation-fee, there would be a large number of affiliated societies, and a good representation at the meetings of the N. A. B. K. A.

We are glad Pres. Abbott has brought this subject up, and hope it may be further discussed, and particularly would we like to hear from Bro. Thos. G. Newman.—Ed.]

RAMBLE 115.

AT M'INTYRE'S, ETC.

By Rambler.

About noon, one balmy day in June, the meditations of friend J. F. McIntyre, of Fillmore, were interrupted by the Rambler suddenly appearing before the gentleman's study-window, where he was busy writing or studying the bug and scale, I forget which. He was evidently surprised a trifle, and Mrs. McIntyre evidently shared the same feeling as she advanced from a rear room.

I had left Mr. Wilder in the road beyond the barn, with our outfit, while I prospected ahead. Mr. and Mrs. McIntyre opened their door wide, and invited me in; but I said, "Oh, no! you must come out here and see what an outfit I have. I am but a small portion of it." It just happened that, while I was at the house conversing with Mr. and Mrs. McIntyre, a wagon drove up to the big gate beyond the house, and eight large healthy women of various ages disembarked and came marching through the gate just in time to meet us. Mrs. McIntyre had been advising the Rambler, on various occasions in the past, in relation to the loneliness of the bachelor life; and now to meet eight

women, and be in danger of having them mistaken for my outfit, was a little too much. I frantically shouted to Mr. Wilder to drive in, and that explained what our real outfit consisted of, and no women aboard of it. I found that, during the two and a half years that had elapsed since my visit to the Sespe bee-ranch, there had been many improvements. The pepper-trees up the Sespe Avenue had grown to good height. New orchards have been planted, and new and elegant residences built, new oil-wells sunk, and prosperity seemed to smile upon the good people of Fillmore.



MR. AND MRS. M'INTYRE AND FAMILY.

The Sespe apiary seemed to be in a flourishing condition. The orange-trees were loaded with fruit, which was being disposed of to various customers who called for it (that is what the outfit of eight women were after). The various other fruits on the place were getting ready for the harvest. The only unproductive thing this year was the apiary, and a feeder now and then on a hive showed that there were some colonies that were getting short of stores; but our friend hoped that the apiary would pull through without a general feeding. Mr. McIntyre still has a greater portion of his last season's crop all packed in a new fire-proof honey-storehouse. The dread of fire and the cost of insurance are banished, and the precious sweets that cost so much toil from both man and bee are safe. Mr. McIntyre's home sales of honey are quite large. His reputation for a good article leads many small dealers to place their orders with him.

The honey-extractor devised by Mr. McIntyre, and described in a past issue of GLEANINGS, has done its work well, the little water-motor causing it to spin like a top, and save much hard labor.

The great honey-plant of this region is the purple sage. It differs from the common black sage in having larger bolls, and the foliage is

nearly white, while the black sage is dark green. The purple sage covers the great mountains to their very tips; but without rain there is no honey nor fragrance to call the honey-bee to its accustomed task. We found that the disease recently spoken of by Prof. Cook, and which in some respects resembles foul brood, has been known here for some time, and is not considered a dangerous disease. Bee-paralysis is quite troublesome in some apiaries, and Mr. McIntyre attributes it in a measure to the colony getting weakened at some period in the winter, so that the queen gets slightly chilled. Uniting an affected colony with a strong one, and thus warming them up, usually cured the disease. Bees kept in shady or moist places were also more affected than in sunny locations. Experiments in this line are worthy of trial. From accounts of the widespread prevalence of the disease, and its virulence in some localities, it would be well for apiarists to note the condition of their colonies in the early spring months, when cool nights are prevalent.

The next day after our arrival we attached our ponies to Mr. McIntyre's family wagon, and Mr. and Mrs. McIntyre and the four girls, with Mr. Wilder and myself, made a lively picnic load. We all journeyed up the Pole Creek Canyon to the residence of T. F. Arundell, another of the noted bee-keepers of Fillmore. It would delight any reader of GLEANINGS to make the trip here, as well as in the Sespe Canyon; for a like boldness of the scenery is most inspiring. As we wind along from the mouth toward the tail end of the canyon, finally, after a sharp climb, we find ourselves at the residence of our friend, which is sublimely located upon a little mesa, right among the towering mountains. The photo will give the reader a very good idea of the situation of mountain after mountain, canyon and precipice commingled. Although Mr. Arundell has the usual sized farm of 160 acres, or thereabouts, his stock has the range of all of those vast mountains; and though some of the pasture-lands hang up edgewise, like a picture upon the wall, Mr. Arundell and his boys and his 36 horses can climb them as nimbly as a deer. These alpine climbs give great expansion to the lungs, and sickness is unknown in the Arundell family; and when all together there is quite a swarm of youngsters clustering around the parents—four boys and two girls. The two older boys mount the old pet horse, and dash down the steep winding grades of the canyon, at a rate that would make an ordinary fellow's head swim. The cows are hunted. The musical ding-dong of the cowbell directs them to the herd, and they are soon in the corral near the house.

Pole Creek Canyon is so named from the number of tall sycamore poles found there. Owing to the perpendicular and even overhanging sides of the canyon, trees have to

MOUNTAIN RESIDENCE AND APIARY OF T. F. ARUNDEL, PILLMORE, CAL.



grow to a great height in order to get much of the sunlight. The same waterfall, over 60 feet in height, which Mr. Root described some two and a half years ago, still plunges down, and is forming fossil leaves, etc., by depositing mineral matter from its impregnated waters. There is water running, even in a dry season, to run a dynamo, and Mr. Arundell is studying the me-

located the home apiary. In the honey-house, at the time of our visit, there was stored 12 tons of the 1894 crop. This, in proper time, will have to be sledded down the steep grade that ends near the house. Besides the home apiary there are two out-apiaries, located in excellent honey-districts. The bees in the home apiary were working vigorously upon the various plants in the canyon. A peculiar bush, called the coffee-berry, was in profuse bloom, and the bees were reveling upon the blossoms. There was a prospect, however, that the bees would require feeding before the dry season comes to an end.

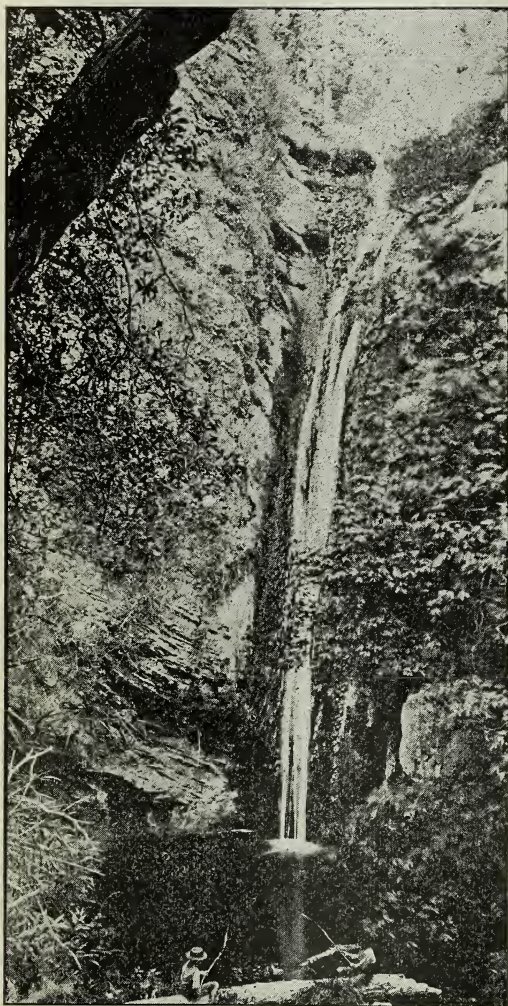
Mr. Arundell called our attention to his seven-ton tank; also to a large quantity of jumped wax. All the cappings, and odds and ends of comb in the apiaries, are put into a large can, and compressed into the smallest possible space by jumping it down with the feet. It becomes so solid that it is miller-proof. Mr. A. uses a yucca brush; but instead of those little affairs that seem to content some bee-keepers he uses a brush long enough to brush the whole side of an L. comb with one sweep. Several pieces of yucca are placed between two wooden strips. Wire nails were driven through and clinched, holding the yucca, and a brush of any length can be made. Mr. Wilder makes the same sort of brush, but uses manilla rope instead of yucca.

In speaking of these almost inaccessible mountains, and the desirability of establishing apiaries even further back in them, Mr. A. cited an instance of a donkey apiary; i. e., the only way to get to it was over a donkey-trail. The bee keeper operating it would load sixteen donkeys with the sweet product, and drive them out to civilization.

Deer are found quite plentifully in the mountains; but, as shown in the half-tone, it is something of a laborious task to hunt them. A hunter brought out some fine venison and wanted thirty cents a pound for it. The purchaser demurred. "The price is too steep," said he. "Steep!" said the hunter, "why, sir, the price is not half as steep as the place where I shot the deer."

A hint in relation to deer-hunting was enough to hold Mr. Wilder over another day. An early morning hunt was indulged in; and the result of a long and arduous climb was only a futile shot at long range. The Rambler prefers to hunt rabbits and quail. There is more certainty of game, and less steepness to it.

After several days with our friends we started upon our journey; and it seemed so much



WATERFALL, POLE CREEK CANYON.

chanics of changing his water power into electric energy; and we have no doubt his house will be electrically lighted, and the honey-extractor run by the same power, ere long. The steepness of the grades upon Mr. Arundell's ranch necessitates much sled work in getting the various products to the vicinity of the house. The honey-house can be discerned in the upper left side of the photo, and here is

like leaving home again that we resolved to stop not so long again. As we hauled out of Fillmore we mutually exclaimed, "May the shadows of the McIntyres and Arundells never grow less!" As between the two there are ten children, there is not much danger of lessening shadows.

THE REPORT OF THE ONTARIO BEE-KEEPERS' ASSOCIATION.

ROBBING SICK PEOPLE, AGAIN.

By Allen Pringle.

Mr. Root:—In the August 1st issue of GLEANINGS, notice is made of the Annual Report of the Ontario Bee-keepers' Association; and in looking it over you were "struck at once with the evident fullness and correctness of the report." Allow me to say here, that, at our last meeting, we made a new departure in order to secure a full and correct report of our annual meeting. We engaged a professional stenographer to take a verbatim report of the whole proceedings. The credit of that move is due Mr. R. McKnight, of Owen Sound, who argued that, as our association is under the patronage of the Ontario Government, we ought at least to present a full and creditable report for publication. The writer seconded Mr. McKnight in this, and the meeting sanctioned it. It seems to me that the North American and other important apiarian associations might profit by this precedent.

Before closing this note, allow me, Mr. Editor, to fully indorse what you say in the same issue, under the head of "Robbing Sick People—Science and Superstition." If you *will* devote a portion of your journal to extraneous subjects (and you have a perfect right to, so long as you duly announce it on your title-page), that is a kind of preaching of exceeding value and vital importance to such of your readers as need it; and the great majority of people everywhere need such admonition and instruction. What still further enhances the value of the exposé is the fact that, as nearly the whole newspaper press, without exception (religious as well as secular), and also, I am sorry to say, the agricultural and other journals, hold their columns open to be bought by these conscienceless frauds and sharks, the same columns are shut against the exposé of the evil. And this is really one of the greatest evils of modern civilization. To think that, for the sake of the almighty dollar, the press of the country (yours, ours, and others') will knowingly allow the leeches and vampires of society to thus prey upon the ignorance and credulity of the people! As an individual I can not withhold my thanks from you for your brave and timely condemnation of the gigantic evil. Why, the thing is coming to such a pass that you can not open a paper without being confronted on every page

of it (editorial, business, news, etc.), with the flaming falsehoods of these mountebanks who artfully resort to every device and trick to catch the attention of the reader, and rake in the hard-earned money of the poor, the sick, and the unfortunate.

Selby, Ontario.

[As we stated editorially, the report bore evidence of having been fully and accurately reported. We wish that the North American had funds enough so that its reports might be prepared in a similar way. It is much more satisfactory to condense afterward from a full stenographic report made on the spot than to try to get down in longhand all the good things that were said and done. As it is, there are apt to be many important omissions, and sometimes a little coloring favoring certain views. If the North American could have the funds of the Illinois State Bee-keepers' Association, or those of the Ontario, it could do many things that it can not do now.]

We are glad to place the credit of that excellent report upon the right persons, and therefore accept the correction.

If more of our religious and agricultural papers would look less to the dollars and cents, and more to the greatest good to the greatest number, they would be more careful about accepting certain lines of advertisements.—Ed.]

THOSE CALIFORNIA HONEY-YIELDS, AGAIN.

WHAT AN OLD CALIFORNIA VETERAN HAS TO SAY OF THEM.

By R. Wilkin.

I am quite in sympathy with the statements of W. G. Hewes, in GLEANINGS of May 1, regarding the average yield of bees in California. I refer, as I think he does, to Southern, not Middle or Northern, California. Only when he spoke of prevaricators among the sage rush, by which, of course, he meant bee-keepers being as plentiful as ticks, I felt like saying, "Not so fast, friend Hewes." But when I reflected that, in all my ramblings among the brush, I had very rarely got a tick on me, I concluded he was right. He only meant that they were very scarce.

At the State bee-keepers' convention at Los Angeles last winter it was interesting to observe how Prof. Cook's eyes brightened up as the best of evidence, the personal reports for a series of years by good bee-keepers, came in thick and fast, corroborating his already high estimate of California's possibilities. Of course, Martin and others caught the enthusiasm; for who is it that does not like to hear of grand successes? My own pride in our State, and in my own reputation as a successful bee-keeper, prevented my speaking out real loud against the danger of exaggerated notions, and I only modestly remarked that I thought a considerable discount should be allowed from these reports to make them correspond with the actual experience of all.

During my first thirteen years in California,

commencing with 1876. I kept a record of the yields of all the leading apiaries in Ventura Co., and found that they averaged about as well as my own, which was 75 pounds to the hive. The next six years, including the present one, for we shall get no honey this year, my apiary averaged only 35 lbs., which reduces the average for the past nineteen years to 62 $\frac{1}{8}$ lbs. per hive, spring count, and extracted honey. So great have our yields been at times, that our expectations will hardly allow us to think the average as low as it is.

Ventura, Cal.

DO BEES TRANSPORT EGGS ?

A COUPLE OF WELL-AUTHENTICATED CASES
PROVING THAT THEY DO.

By John Phin.

Editor Gleanings:—In regard to the discussion as to whether or not bees ever transport eggs from one cell to another, it may be well to note that a single well-authenticated case is amply sufficient to prove the positive, but that a hundred well-explained cases on the negative side still leave the question open. In Langstroth's work, "The Hive and Honey-bee," third ed., page 219, we find the following: "I have, in several instances, known them to carry worker eggs into royal cells. Mr. Wagner put some queenless bees, brought from a distance, into empty combs that had lain for two years in his garret. When supplied with brood they raised their queen in this old comb! Mr. Richard Colvin, of Baltimore, and other apiarian friends, have communicated to me instances almost as striking."

This passage I have failed to find in Dadant's book. Unless we impeach Mr. Wagner's veracity, I do not see how this case can be explained. Wagner certainly knew a queen from a drone.

New York, July 24.

[Thanks. We did not think to consult the old Langstroth on the Honey-bee, and are, therefore, obliged to you. Samuel Wagner was one of the keenest and brightest men the bee-keeping world ever knew. No man, except Langstroth and Quinby, did more for the advancement of bee culture in the early days than this same "lamented Wagner." His testimony, together with the facts presented by others more recently, proves conclusively that bees may and do transport eggs.—ED.]

DO BEES REMOVE EGGS ?

MORE EVIDENCE.

By A. C. Mitchell.

The discussion on the above question is, to say the least, interesting. While Willie Atchley is positively certain they never do, Bro. Golden is equally certain that they do. Strange how widely we differ on matters apicultural! but while we are compelled to rely on circum-

stantial evidence to the extent that we are in the apiary, and while we view the same things from different standpoints and different lines of work, different beliefs will exist, although we are all equally honest.

Some twelve years ago a visiting bee-keeper told me that hopelessly queenless colonies would frequently steal eggs from other colonies for the purpose of raising a queen. Of course, I regarded the story as fishy; but having at times found queenless colonies with freshly started cells having eggs in them while there was no sign of eggs or brood in any other part of the hive, I decided to test the matter at the first chance, which came in a very few days. As I had, some time previously, divided quite a number of colonies for increase, putting five frames of brood and honey in each hive, and allowing the queenless halves to rear queens, in looking them over about the time the young queens should have commenced laying I found one with three queen-cells started, and with from two to five fresh eggs in each cell, but not an egg or particle of brood in any other part of the hive. Now, instead of giving them a queen or queen-cell, as I had always done before in such cases, I covered the hive up and left them to work out their own destiny. Well, the result was, that, in about 15 days, I found a perfect queen walking over the combs, one cell cut open on the end and the other two on the side, in the regulation way. Not wishing to let one test decide it, and really not wanting to believe it at all, I tested it in the same way, and in the most careful manner the next season, and also the next, making three tests, all with the same results. I then let the matter rest until last season, as I was satisfied; but seeing an editorial in the *Apiculturist*, stating that such a thing never occurred in the world, and that the idea was only the imaginings of a cranky brain. I tested it again with a full colony that had been queenless 28 days, and with the very same result; and that queen is a very fair one, and bosses that same colony to-day. How the eggs got there is the question. I can see no other way for it than that the bees carried them from some other hive.

Now, where we have laying workers in a queenless colony, they will, as friend Atchley says, pile the eggs into the queen-cells that are in process of construction, but they don't stop at that, but go on in cell-stubs, drone comb, and even lay the worker comb full at times, but never allow the queen-cells they have laid in to mature, but cut them down as fast as the workers complete them. No doubt, if the queen-cells were introduced to queenless colonies they would produce drones. I'll find out, the next chance I have, even if it costs me a colony of bees to do it. I sometimes find a dead drone in a queen-cell where the other cells, built at the same time, all produce perfect queens.

I should like some light on that point, as I can't get up even a respectable theory as to the cause of it.

I vote yes on the picture of the Root family, and good large ones at that, even if it takes a whole number of GLEANINGS to do it.

Enfield, Ill., Aug. 6.

[Since publishing what we have in recent numbers, to the effect that bees do move eggs, we have received a large amount of correspondence corroborating the fact enough so that we think we can definitely and positively say that bees do at times move eggs from one part of the hive to another, and even deposit them in queen-cells. If we had room we would publish all the matter on this subject. But the gist of the whole of it is given above —Ed.]

THE HATCH-ROOT DISCUSSION.

THE RIGHT SIZE OF BROOD NEST; SECTIONS
OVER DUMMIES.

By Dr. C. C. Miller.

And now I've something more to say about that Hatch-Root controversy, p. 572. Ernest, you've rudely knocked from under me one of my props without a word of warning. All along I've cherished the hope that in some way it might turn out that there was never any need of having more than eight frames; and now you say a ten-frame hive is too small for a large colony. Are you going to climb the fence to the other side?

Isn't there something loose-jointed in the working-gear of your mind, that will allow you to say that a ten-frame hive is too small for a large colony, and that you found as many as 12 to 15 frames of brood in some colonies, and then in the face of that to say that you don't think you secured more brood in ten-frame hives than in eight-frame? Now shut one eye and take a square look at these two questions. Firstly, don't you think a colony for which a ten-frame hive is too small will have more brood in a ten-frame hive than in an eight-frame one? Secondly, don't you think one of those colonies in which you found 12 to 15 frames of brood would have more brood in a ten-frame hive than in an eight-frame one?

Leaving that for the present, I note that you both agree that the queen will readily go to work in a story added above, at least if a frame of brood be put in the upper story. I should think so! Why, lots of bee-keepers use queen-excluders to keep the queen from going up, and there's no need of a brood-comb as bait either. But I'm a little puzzled to know whether there's any reason for adding the second story *above*, if there's good reason for adding a second story at all. I'm not experienced in that sort of thing; but it seems to me there are at least some reasons for putting it below. As Doolittle would say, it seems to me more according to nature.

A colony starts its combs above, and works

downward. It lengthens its combs downward, and the brood keeps gradually working down. I can't imagine bees in a hollow tree working their brood down a certain distance, then making a fresh start at a higher point. But you say our bees are not in hollow trees. I admit it, and come back to the hive. I suppose the time when you would add the second story is when the bees first begin to be a little crowded, and, likely, that would be in the spring, or before the harvest. Now, at that time you're doing all you can to develop the strength of the colony, and it's considered important to preserve as much as possible the heat. Put a second story above, and the bees have twice as much room to keep warm as they had before, for the heat rises into the new story. Put a second story below, and the bees have no more to keep warm than they had before, unless they work down into the new story, and then they have to keep warm only so much as they occupy, while the empty story above must all be kept warm whether they occupy it or not.

I don't know whether you would contemplate putting on sections while the colony had these two stories; but if you should, I feel pretty sure the bees would not touch the sections till the upper story was filled; whereas, if the second story was added below I am inclined to the opinion that there might be some work done in sections before the lower story was filled.

To go back to that comparison of the 150 eight-frames with the 120 ten-frames, there's a point that I rather wonder friend Hatch didn't make. The claim is quite generally made, and I believe I never saw it contradicted, that colonies do not store honey in exact proportion to their strength, but that strong colonies gather proportionally more honey than weak ones. That is, a colony weighing 8 lbs. will store more than twice as much honey as one weighing 4 lbs.; and if we add one-fourth to the strength of a colony we will add *more* than a fourth to its surplus. According to that, although 120 ten-frame hives may be supposed to have only as many bees as 150 eight-frames, yet they ought to give more surplus.

You both seem to agree that bees fill out sections better over an outside frame of brood than over one of honey. I very much doubt it. Over empty combs or over an empty space they make poor work; but if the outside comb is occupied and filled I could never see that brood in it made any material difference. You say, Ernest, "When we used ten-frame hives and ten-frame supers, at least one outside row of sections was behind the other rows." That agrees precisely with my experience; but if you mean to have the inference drawn that the thing is different with eight-frame hives, then your bees don't work like mine. I don't think I ever knew a case, either with eight-frames or ten-frames, in which the outside rows of sec-

tions were finished as soon as the others. In the A B C it is claimed as an advantage of section-holders, that the outside rows can be shifted to the center. What's the need of shifting them if the rows are all finished alike? The fact is, that bees are slower about finishing the outside sections just because they *are* outside, independently of what may be under them.

While it was a straight fight between a ten-frame hive and an eight-frame, I could keep track of it pretty well; but now you're getting me all mixed up by talking as if eight-frames were, part of the time, not enough, and you let it leak out that you're running bees in two stories in the linden apiary. Now, look here; no hiding things. If you've been learning any thing new, tell. What were you using two stories for? Were you raising bees or honey? If honey, was it comb or extracted? Was there any gain in having the two stories? What time did you give the second story? When did you take it away? Just own up all about it. Here I've been trusting you to remain loyal to the eight-frame hive, single story, all the year round, and you've deserted and deceived me by running two stories, and, for aught I know, five stories, on the sly.

Now I'll tell you what I'd like. I'd like to be convinced that it is the most profitable thing to confine bees to eight frames all the year round; and, by the way, your head's very level when you insist that an eight-frame hive is better than a ten-frame with two dummies; and then if it must be admitted that *that* won't do in all cases, if you have any scheme by which the eight-frame can be held most of the year, and a second story added part of the time, I'm inclined to believe I'd rather submit to that than to go back to the larger hive.

Now please tell us just where you do stand, Ernest, at latest advices. Do you think a strong colony should be confined to an eight-frame hive all the year round—particularly if working for comb honey? and if not, just what would your procedure be? or are you like me, so uncertain and wiggly you don't know just where you do stand?

Marengo, Ill.

[As you have addressed me personally, I conclude it will serve my purpose better to come out from under the editorial "we" and use the singular pronoun.

To begin with, you have proposed some rather naughty knotty questions, and it *looks* as if the working-gear of my mind were rather "loose-jointed;" but by supplying some particulars, *perhaps* I can redeem that function of my anatomy.

In the first place, I ran the basswood yard for bees, and, incidentally, for extracted honey. There were two reasons for doing this: (1) I knew that, if I ran it for comb honey, they would swarm, and that would require an attendant. (2) I did not care so much for comb or extracted honey as for bees. In selling bees in the form of nuclei, we run short every fall,

and the following spring we are obliged to buy up more or less poorly marked bees on crooked combs; and as it takes a couple of months to Italianize them, they are not suitable for filling orders till along in the season; hence you see the securing of bees was the prime object at the basswood yard. There being a heavy flow at this place, as soon as one story began to be crowded for brood and room for honey, I put on an upper story, putting one or two frames of brood in the same, and filling up the space below with frames of foundation. The upper story was then filled out with foundation. This, of course, would result in more brood and no swarming; and the consequence was, we had quite a few colonies having two upper stories with brood and honey scattered more or less in both; and there were three colonies that had three each, with brood in all the stories. Now that the season is over we have rousing big colonies, and a large number of combs containing more or less sealed honey. We may extract these, or we may reserve them to supply some colonies this fall that are short of stores. Now, then, having given you the situation, I will take up the questions in your second paragraph.

No, I do not think we did secure more brood in the ten-frame hive than in the eight-frame. If the ten-frame hives did not contain dummies there was a couple of frames of honey which we would rather have had in sections above. I may be mistaken; but I feel quite certain that we now rear as much brood in the single-story eight-frame as we formerly had in the single-story ten-frame hive.

Now, others may not agree with me, but I can get, I think, more brood in a tall chamber than in a shallow one spread out horizontally. In other words, I can get more brood easier in ten or twelve L. frames by having them piled up in *two* tiers of five and six frames respectively; because I always notice that the bees show a disposition to work upward or downward rather than laterally. According to this, if the brooding-chambers are in two stories the eight-frame body is plenty large, to say nothing of the ten and twelve-frame stories. But suppose the bees would work out laterally; and suppose they would fill out a twelve-frame Dovetail hive with brood, all of said frames in one tier. The hive would be too heavy to handle; and even a ten-frame hive is rather heavy for the average man to handle when it is filled with bees, brood, and honey; therefore, in consideration of the fact that bees like a tall rather than a horizontal chamber in which to rear brood; and with that other fact that it is handier to have that tall chamber in two sections, I should prefer the eight-frame to the ten-frame. The same logic might call for a smaller than an eight-frame, but it would not be standard.

The eight-frame chamber is large enough, at least ten months in the year, for ordinary honey production. If brood-rearing has been carried on two or three months in the year prior to the honey-flow, there will, according to Doolittle, on this 1000 square inches of comb, be a large enough force of bees to get the crop, providing there is one. Then the necessary room can be obtained by adding supers.

But you will say I want to run for comb honey, and others desire to run for extracted, and that you can not, in one story of the eight-frame, get more than eight frames of brood. Granted. But in most localities, if that eight-frame capacity is kept booming from May 1, we will say, until the middle of June, or about the time when the first white honey begins to come, you will have a large force of bees. Manifestly, after this time, if honey is the object, more brood is not wanted; because the bees, when

they hatch from said brood, will be consumers after the honey-harvest; hence the eight frame, for the production of comb and extracted honey, in localities where the white honey comes on by the middle of June, and lasts anywhere from a month to six weeks, is large enough for breeding-purposes, and just small enough to make the bees *force* nearly all their white honey into the supers—just where we want it.

Now, I think I have answered your questions in the next to the last paragraph, and we may now consider whether the putting-on of the extra stories gives the bees just so much extra room to warm up. Well, to a certain extent it does; but we always make a practice of using division-boards; and, where convenient, use enamel cloth or something to lie over the lower set of frames on the cover. Perhaps you think this a nuisance; but it pays; but in the case of comb or extracted honey it is not necessary to add more than half an upper story at a time. In the case of the former, one tier of sections will not give a good colony too much room to keep warm. In the case of the latter, a half-story with extracting-frames, *a la* Dadant, can be added in a similar way with similar results.

But the advocates of shallow brood-chambers will claim, perhaps, right here, that it is better to have all the brood chambers divisible, and then the capacity of the hive can be increased more gradually, and that those who desire eight and ten frames of brood capacity can be accommodated by using two or three brood-chambers of the shallow sort. There may be a good deal in this. That being the case, if desiring to make a change I certainly should prefer to *reduce* the size of the brood-nest, something after the style of the Heddon, rather than to *increase* the eight-frame to ten or twelve frame capacity.

And now as to the 150 eight-frame or 120 ten-frame hives. You and Mr. Hatch seem to assume that the ten-frame colonies will be proportionally stronger than the eight-frame. With the right sort of manipulation I somewhat question this. But suppose they are. I should rather lift individually—that is, at 150 different times—150 eight-frame hives—that is, to lift them into a wagon or carry them into the cellar—than 120 ten-frame hives, full of bees, at 120 different times.

My views, as above stated, are subject to revision. I am quite willing to change to the ten or twelve frames; or, to go the other way, to shallow brood-chambers, if the logic of events shall in time demonstrate the wisdom of such a change in either direction.—ERNEST.]

SALT FOR QUEEN-CAGE CANDY.

FORMING SMALL NUCLEI.

By W. A. Pryal.

Has any queen-breeder tried salt in the sugar used to make the shipping-candy he sends out with his queens? I find that a small quantity of salt in the candy makes it soft at a time when it would otherwise be hard. This is something that we have all been striving for for some time. Should others' experience prove the same as mine, then I think we shall have solved one of the most difficult problems in shipping queens long distances.

The way I came to try this plan was, that I had made up some candy out of very fine sugar, which I had previously heated, and hot

honey. Both were well mixed; and when they were set aside as finished, the mixture became as hard as stone after it had become cool. It remained in this condition for some days; but as the outside began to absorb the moisture from the air, it became soft. In time the whole mass "melted" down, and was almost as liquid as the honey was that I had used originally in the manufacture of the "candy." I attributed the rapid softening of my candy to the large amount of salt that the air in this part of the State is charged with. The cause of lead paint on buildings being so soon ruined here is said to be due to the saltiness of the atmosphere.

This knowledge led me to believe that it would be safe to make the candy quite hard for cages that were to be sent on a sea-voyage. The candy would soften about as fast as it was necessary. Had salt been added to the candy before the cage was shipped, the candy would have become too soft; should the candy have been of a soft composition ere the cage is sent off, the candy would also become too soft as soon as it was well on the salt water. For cages that were to be shipped altogether by land, especially through a hot country, the candy could be salted as much as necessary. Of course, the quantity of salt required for a single cage is comparatively small; but it has a wonderful effect in keeping the candy soft. Owing to the dry season in this State, or more especially in the southern part of the State, I did not have as many calls for queens as I otherwise should, hence I did not have an opportunity to test this plan of shipping as much as I could have desired. Still, I have tested it sufficiently to satisfy me that it is a great help to queen-breeders.

During the past season I have experimented with the Doolittle plan of rearing queens. The result of my experience has been such as to cause me to abandon the plan altogether. I tried his cell-cups and transplanted larvæ in the way he describes in his interesting book on queen-rearing; but in no case could I get the bees to accept any of them. I carried on these experiments at a time of the year when the bees would be the most likely to accept them. I even tried them after I had removed the queen-cells from the hives that the bees had already started themselves. Possibly, if I were to try this method another year I might be able to get better results. Still, as there was plenty of honey coming in at the times that I devoted to this line of experiments, I am inclined to think I can not achieve any better success another year than I experienced the past season.

In the many years that I have raised queens for my own use or for commercial purposes, I have never had so good results in getting fine good queens as I have when I have tried the plan mentioned by Simmins, in his "Modern Bee-farm," page 144. It is far easier than any

of the artificial-cell methods, and, I am sure, no finer queens could be produced by any other method.

SMALL HIVES FOR QUEEN-REARING.

Some writers during the present year have mentioned the matter of small hives for rearing queens in. Several of these writers have referred to the subject in the pages of GLEANINGS. It is generally conceded that the small hives are unsatisfactory; my experience is, that they should not be the chief hive used for this purpose. I find that a hive about the size of that used by Mr. Doolittle is the one that suits me best. Still, as they require so much comb space, and as I consider the combs too valuable for use in an apiary run principally for extracted honey, I devised a modification of the Doolittle plan.

During the height of the honey-flow, which is about the time when the bees commence to swarm, a very small hive can be used to advantage. From this on to about the time that the bees commence to drive the drones out of the hives, which here is usually about the middle of July, these hives can be kept in use. After that time they should be broken up. The way I have done to form these small hives is to divide one of the section-supers of a Dovetailed hive in two by putting a division-board across the super the short way thereof. I fill this super with small frames that hang on rabbets. Comb foundation should be placed in these frames so that the bees may the more quickly draw them out. Being placed upon a hive that is ready to store surplus honey, one will soon have a lot of nice combs, some of which should be filled with honey, while some should be only about half drawn out.

Three or four of these combs are placed in small hives made to take such a sized comb. As soon as a swarm has issued I get some of my small hives ready by taking as many frames as I require out of a super, and place them in my hives. They are now set where I intend the hives to remain while rearing queens. I next take a queen that has just hatched out, and cage her and leave her in a shaded place alongside of the nucleus hive that I am about to form. I then take half a pint of bees from the swarm that has clustered upon a tree near by, and dump them either upon the frames of the little hive or at the entrance. I prefer to empty them right into the hive if I know that they have not a queen with them; otherwise it is safer to turn them out at the entrance and watch them as they run into the hive, so that, if a queen is with them, she should be removed, and the queen that is in the cage near by released and allowed to run in with the bees. This young queen should be liberated at the time the bees are introduced at the top of the frames if the bees are thus placed in the nucleus.

I have found this a much easier way of form-

ing nuclei than any other way that I have tried. Should one have sufficient young queens, a number of these small hives can be made up out of a large swarm. One can get very fine queens by taking the cells from a hive of one of his best Italian colonies that has just thrown off its second swarm, and using them for pulled queens. I have tried this way several times to my entire satisfaction. I could not wish for a more desirable way of raising queens.

These small hives should be treated in the same way, so far as the management is concerned, as the larger hives should. The only thing one has to look out for is, that they be well provisioned with honey. When they are found to be short, all one has to do is to take a frame of honey from the super where the small frames are drawn out, and exchange it for one of the frames in the nucleus that is short of stores. Sometimes it may be necessary to add a frame of brood to one of these hives so as to keep up its strength. This is an easy matter to do; for, by allowing the queen in the hive, where the aforesaid combs are prepared, to have access to them, she will fill some of them with eggs, and consequently it will be necessary to remove only one of these frames of brood to the nucleus requiring brood.

Toward the end of the season, or about the time that the bees begin to drive out the drones, as I have already stated, it will be time to break up these nuclei, as about this time it is probable that robbers will be preying upon them. These small hives are also useful for keeping surplus queens in when the queen-raiser desires to use the larger hive for other purposes.

The use of these little hives will be found a great saving in many ways besides the cheapness of their manufacture, to the queen-breeder. It seems to me that no yard, especially in this State, could well afford to be without them.

North Temescal, Cal., July 30.

ERNEST R. ROOT.

THE MANAGING EDITOR'S CAREER AS SKETCHED BY DR. C. C. MILLER FOR THE AMERICAN BEE JOURNAL.

As announced editorially, the managing editor and subject of this sketch is making a tour on his wheel through Michigan, Wisconsin, and Illinois. He has doubtless made an unexpected appearance at the door of a godly number of bee-keepers, and I have no doubt that, without exception, he has received a cordial reception. Notwithstanding there have been repeated requests for his picture in GLEANINGS, he has been too modest to accede, and it is without his permission that we gratify the wish of a host of readers in reproducing a picture, and sketch of his career, from the pen of his very warm friend Dr. C. C. Miller, which appeared in the

American Bee Journal some time ago. While we do not have his sanction, we feel sure that this will be quite as agreeable to the majority of the readers of GLEANINGS as his visit to the homes of those bee-keepers who are fortunate enough to be in the path of his wheel. While we may be taking unfair advantage of him in his absence, and perhaps seem to have transcended the proprieties, this general and oft-repeated desire for a look into the face of the editor is our only excuse for their insertion here and now. The writer, who holds Ernest in high esteem, being his big brother-in-law, with broad shoulders, will risk incurring his displeasure. Without further introduction we reproduce the sketch entire, with picture, as it appeared.

J. T. C.

It is not often that a periodical is so favored as is the *Bee Journal*, with the opportunity to present to its readers, in a biographical sketch and by portrait, one who has come into well-earned prominence with such rapidity and permanency as Mr. Ernest R. Root. Though we have not met him face to face, we feel that we have in him a sympathetic brother and friend, if we may judge from the exceedingly pleasant and profitable correspondence that has passed between us.

Dr. Miller, who has known Mr. Root since his twelfth year, tells, as only the doctor can, how he has grown up into his present noble manhood and enviable position of usefulness as editor of "lovely GLEANINGS." Let us all hope that Mr. Root may long be spared to bless the field of apiarian literature with his graceful pen, and more graceful and earnest efforts in behalf of the whole bee-keeping world.

Permit us now to invite you to a careful reading of the following interesting life-story of our friend and brother-editor:

Somewhere about twenty-four years ago I visited Medina, Ohio, for the first time, going by stage, as there was then no railroad. Among the things I there saw was a boy, perhaps in his twelfth year (he was born June 23, 1862). His name was Ernest R. Root; and in spite of the three decades that have passed over his head, he is still called "Ernest," both at home and abroad, much oftener than "Mr. Root." I don't know just why this is; certainly not for want of respect. Perhaps because his pleasantly cordial manner, both in writing and conversation, makes every one think of him as a familiar friend. I hope it may be always so. If he should ever get to be "Mr. Root" with me, I don't think I should like him as well as I do "Ernest."

The principal thing that I remember about him on that first visit is, that I do not recall that, during the 24 hours I was there, he was engaged in killing cats or tying tin cans to dogs' tails. So I don't suppose he was worse than the majority of boys. Indeed, I suppose he was too busy in other directions to have much time for such things. His father was A. I. Root. That's equivalent to saying he was a hobbyist—a born hobbyist. I am told that at a very early age he showed an extreme fondness for pictures—A. I.'s son, you see.

As a boy, one hobby was machinery, and to him a well-rigged water-wheel or windmill was the sum of earthly happiness. Later on, singly or combined, along with other hobbies, came mechanics, elec-

tricity, microscopy, bees, photography, and bicycles.

In electricity he thought he found himself the discoverer and inventor of many things of real value, but on informing himself more fully was somewhat chagrined to find that he was neither an inventor nor discoverer, for all his new things were old. In spite of that, he still retains a fondness for every thing connected with electricity.

The use of the microscope, notwithstanding its injury to a pair of eyes none the best fitted for it, was pursued with zeal; and among other microscopic studies, he took up the anatomy of the bee, going so far as to publish two or three articles thereon, when the appearance of the magnificent work of Cheshire made him again feel that he was only working over old ground.



ERNEST R. ROOT.

To go back. In the year '81 he entered the preparatory department of Oberlin College, and left at the end of four years without graduating, being obliged to go home and take part of the burden that had become too heavy for his father's shoulders. That settled him in one direction, and shortly after he was settled in another direction, when he capitulated to a pair of black eyes, with properly accompanying charms of mind and body, possessed by Miss Elizabeth Humphrey. After some opportunity for observation, I am glad to believe that in her Ernest has a very worthy wife. She has a rival in his affections in the person of their two-year-old son, Leland Ives—a rivalry that she seems to bear not only meekly but cheerfully.

Like his father, a rider of hobbies, I think Ernest is the better horseman of the two. Once fairly seated on a hobby, A. I. gives free rein; and if, in the chase, his hat is blown off, he only flings his arms the higher, and enjoys the fun. Ernest keeps a steady hand on the rein; and if the speed is too

great, or the direction not to his mind, with a sharp pull he brings the hobby under control, or else deliberately dismounts.

Few have had the chance for editorial training that Ernest has had, and few have so well profited by it. Probably no one could tell when he became editor of *GLEANINGS IN BEE CULTURE*. I doubt if at any point of time there was any formal transfer of the position of editor from father to son. The fact is, he grew into the place. Very likely not many of the readers of *GLEANINGS* know how fully under the control of the son are its columns. Except the home and garden departments, if I am not mistaken, unless you find the initials "A. I. R." attached, you may be sure that every thing has felt the editorial influence of Ernest. That the journal has lost nothing by the change of censorship, in the minds of its supporters, is evidenced by the fact that, within five years from the time Ernest took hold, the subscription list increased from five to ten thousand.

How much of the ability to control within proper limits his natural inclination to hobby-riding comes from a balance-wheel inherited from his mother, I can not say. I am quite inclined to credit that ability largely to the father. With a matured judgment coming from a wide experience, so long as it was needed, he kept a close watch lest any false step was taken, and very likely Ernest was saved from coming to grief more than once by listening to the advice of his more experienced father.

Being both independent thinkers, it is hardly to be expected that the father and son should always hold the same views. Indeed, they are very far from doing so. But to me it has always been very interesting to notice the readiness to concede on the part of each, and to view with respect the opinions of the other. Fortunately for the best use of the position he holds, in any question having an important bearing on the general interests of bee-keepers, Ernest never hesitates to seek counsel from those on whose experience he can rely, and in any important departure as to the manufacture or use of appliances he asks the opinions of a number whom he considers experts, seconded by his immediate cabinet of advisers—his father, his brother-in-law, J. T. Calvert, and the foreman of wood-work, J. S. Warner.

It is also fortunate that Ernest has given up, or sent to the background, his bent for invention. As an inventor his field would be more limited. He operates in a wider field, and is always on the lookout for improvements, come they from what source they may, new or old. And no pains are spared to get at the truth of the matter, or to bring it to public notice, if found worthy. Immediately connected with an immense manufacturing establishment, *GLEANINGS* holds a position as leader in largely deciding what shall and shall not be popularly used among bee-keepers—a position that it could not long hold if its leadings were not always carefully made in the direction of the best interests of all concerned.

I quote here from a sketch published about two years ago in the *Review*, written by the principal stenographer and proof-reader in the office of *GLEANINGS*:

"In manners, Ernest is very open and friendly. In fact, one knows him about as well after an hour's talk as he ever will. But this friendly urbanity

does not prevent him from seeing the quack and impostor in an instant, so he is seldom, if ever, imposed upon. He is utterly destitute of selfishness; and his library, his camera, microscope, gun, or whatever he has, is entirely for the benefit of any who can be benefited thereby. His picture shows phenologically an even balance of temper, which is well known to us here; for it is just as safe to ask a favor of him before dinner as after, which is not the case with most men.

"In speech, our junior editor is very rapid, with frequent interruptions, or going back to get a better word. In this respect he is just the opposite of his father, who seldom changes a word in dictating even two pages of "Our Homes," containing 3000 words. A. I. has all his editorials fully matured and ready to put together, like the stones in Solomon's temple, while Ernest goes more on the cut-and-try plan.

"But the best thing I can say about Ernest is the unchanging attention which he pays to his father and mother. With him, nothing must stand in the way of their convenience and pleasure."

"In speech," used by the writer quoted above, evidently refers to dictation for publication, for in convention, although perhaps a little rapid, he is easily followed, and I do not recall any hesitation or going back for a better word. He is a pleasant and easy conversationalist, with a certain inquiring expression that always suggests to me an interrogation-point—a never ceasing watch for what may be new or true.

I can hardly say as much for his writing as his speech. I have little faith in the ability to read character from handwriting; and if I were called to pass a night for the first time in a room with Ernest, with no other knowledge of him than seeing some of his handwriting, I should surely want to put my watch under my pillow. Perhaps if I had the privilege of a stenographer and phonograph, my chi-rography might be no better than his.

The word in the German language that means "earnest" is "ernst," and changing the first letter to a capital it becomes the proper name Ernst, which in English is changed to Ernest; so there might seem something prophetic in his christening, for if any one characteristic stands out prominent in Ernest's make-up it is his intense earnestness. I remember being quite amused at a bee-keepers' convention at seeing him carrying about with him a piece of a frame, in which he was at that time much interested; and wherever you saw Ernest, there you saw that piece of stick to which he was solemnly holding on, apparently determined that he must make others see in it the merits he saw. And he did.

As mentioned in the quotation given, another characteristic is evenness. Whether at the factory, at church, at convention, at his house, he always has seemed to me alike, the same earnest Ernest. As might be expected, he is active in the church and Christian Endeavor Society, and has been elected for the third time as superintendent of the Sunday-school.

Among the many bee-keepers with whom I am proud to claim acquaintance, none appear to me more like a brother. He seems more nearly my own age (most of the others seem older), and somehow I can get closer to him. Probably others feel much the same toward him.

HONEY STATISTICS.

ONE OF THE POOREST CROPS ON RECORD.

Three weeks ago we sent out about two hundred return postal cards on which were printed these questions: 1. What has been the honey season in your vicinity, so far as you know? 2. What was your average yield per colony, in honey, both comb and extracted? Space was left for a brief answer under each, and for name and address of reporter. The replies and reports received from others are compiled by States.

Briefly stated, the honey crop seems to have been most abundant in central and lower Florida; good in Texas; fairly good in spots, in Kern and Inyo Counties, Cal.; in Oregon, Utah, Colorado, Minnesota, Wisconsin, Ohio, Michigan, New York, and New England; very poor in other portions of most of these States and others, and a total failure in the most of California, Nebraska, Iowa, Illinois, Missouri, Kentucky, Tennessee, Mississippi, North Carolina, South Carolina, and Georgia. The general impression given by the reports for the whole country is not flattering.

One peculiar thing we have noted from reports is the uneven distribution. Of two bee-keepers but a few miles apart, one would get a fairly good crop, while the other's bees would be starving. On this account these reports may not fairly represent many localities, as the reports received will not average more than five or six to each State. If your locality is not fairly reported in this summary, let us hear from you briefly on a postal, by earliest mail. Don't put it off, but sit right down and write as soon as you read this report, if it does not do justice to your section and place. Do not write about any thing else on the same card.

Reports so far received and condensed for each State are as follows:

Alabama.—Poor; no comb; 20 lbs. ex'd.
 Arkansas.—Poor; 30 lbs. extracted, 15 comb.
 California.—Five report very poor; feeding; fair in Kern Co.; failure as a whole.
 Colorado.—Two report fair, full average; 75 lbs. comb, 100 ex'd.
 Connecticut.—Six report as follows: Medium, 10 to 15 lbs.; fair, 20 lbs. comb; rather above average, 20 to 25 lbs.; early flow good, 25 lbs.; comb above average, 40 lbs. comb; good, 25 lbs.
 Florida.—Six report like this: "Best ever known;" "extra good," etc. W. S. Hart's neighborhood will have about 200 tons. His own average is 344½ lbs.; another reports 554½ lbs. from one colony, but not the best. J. B. Case averages 360 lbs. extra'd, 9 tons from 50 colonies. Florida is "in it" this year.
 Georgia.—Six report: Total failure, poorest season for years, no honey, etc. Nothing encouraging Illinois.—Ten report. Dr. C. C. Miller says, "Bad, bad, very bad. Yield, average, 16 oz." That tells the story for Illinois, though Mrs. Axtell reports 9½ lbs. per colony. Dadant gets "nothing," and will have to feed. For a fuller report from Illinois, see next column.
 Indiana.—Five report poor; one, better than for years; two, from 20 to 40 per cent of average crop; one, 35 lbs. comb honey.
 Iowa.—Nine report. "Absolute failure;" "worst ever known," etc., is the tenor of all.
 Kentucky.—Eight report, showing a complete failure in that State; not an encouraging word.
 Louisiana.—One report—medium season; 30 lbs. ex'd.
 Maine.—Four report "fair," "excellent," etc., with a yield of from 25 to 50 lbs.
 Maryland.—Two report "fairly good."
 Massachusetts.—Three report "very poor."
 Michigan.—Seven report as follows: Good from basswood; 135 colonies gave 5 lbs.; very poor; ¼ of an average yield; poor; poor, not to exceed 10 lbs.; very poor is reported by R. L. Taylor.
 Minnesota.—Four report: Fair to good; two, poor; H. G. Acklin gets 27½ lbs. per colony, with good reports from those near basswood.

Missouri.—Two report poor; one, 50 lbs. per hive; another 10 to 40, ex'd—comb, ½ less; S. E. Miller reports basswood as doing well.

Mississippi.—Dr. Blanton says: "The worst season known in twenty years."

Nebraska.—Five report "very poor"—no surplus.
 Nevada.—E. A. Moore reports, "The worst in 12 years. I generally get 100 lbs. to the hive; this year not 25."

New Hampshire.—One reports, a little below average; one, very poor; one, very fair; one, white clover good.

New Jersey.—One reports "about 40 lbs. comb; one, poor."

New York.—Seventeen report as follows: Basswood medium; ⅔ crop, 40 lbs. comb; poorest ever known; 80 lbs. comb in St. Lawrence Co.; Doolittle has half a crop, 50 lbs. comb, no ex'd; Cayuga Co., very good; Coggsball has ½ of a basswood crop; Langdon, less than half; poor—very poor at Chango Bridge; Greiner, 30 lbs. comb, 50 ex'd; Elwood gets half a crop of white; good in Seneca Co.; very poor at Batavia; fair in Sullivan Co.; average of 24 lbs. at Belden.

North Carolina.—Poorest known.

Ohio.—Poor; very poor; comparative failure, etc., is the verdict of 11 reporters.

Oregon.—Fair.

Pennsylvania.—One reports very good; four, very poor; one, half a crop; one, 25 lbs. comb; one, worst season in seven years.

Rhode Island.—Two report half a crop.

South Carolina.—Two report "one of the poorest."

Tennessee.—Four report a complete failure; one gets 25 lbs. comb, 35 ex'd; one, poor; one, 30 lbs. per hive from 50; one, much honey-dew.

Texas.—One reports, "Continued flow from May 1; no telling when it will stop." J. E. Lay reports "good," two more, later, "very good."

Utah.—G. N. Dow reports "very good," with 60 lbs. per colony, ex'd, at Salt Lake City.

Vermont.—Three report an average crop. J. E. Crane gets 37 lbs. per hive; A. E. Manum, 35; three report "poor;" two, "the best in several years."

Virginia.—Two report poor; one gets 15 lbs. comb.

West Virginia.—Poor, very good, extra fair, is what three reporters say; average of about 30 lbs. honey.

Wisconsin.—Two report very poor; C. Grimm, 20 lbs. comb, 50 ex'd, per colony; P. P. Best, 50 lbs. ex'd, 10 lbs. comb; Frank McNay, 60 lbs.; M. A. Gill, 100 lbs. per colony. Later, two report good.

THE HONEY YIELD IN ILLINOIS.

The following is the July report of prospects of honey from the members of the Illinois State Bee-keepers' Association. The questions and answers correspond in number.

1. How many colonies have you?
2. What are the prospects of a honey crop?
3. How much honey gathered to date?
4. Is the honey gathered No. 1 or not?

Allen, Thos. B., Stirrup Grove, Macoupin Co.—1. 31; 2. Poorest ever known; 3. Not any—have not even put on sections.

Anthony, A. B., Coleta, Whiteside Co.—1. 27; 2. No more for this unusually dry season; 3. 200 lbs. comb, 100 lbs. extracted; 4. Basswood, and No. 1 for the kind.

Arnold, Frank H., Deer Plain, Calhoun Co.—1. 95; 2. Very poor; 3. About 1100 lbs; 4. No. 1 of its kind (honey-dew).

Beall, C. M., Clayton, Adams Co.—1. 8; 2. Some buckwheat sown from which they will probably get honey enough to winter on; 3. None. I put on no supers, as the white clover was all killed, and there is no basswood in this vicinity.

Bevier, M., Bradford, Stark Co.—1. 40; 2. Poor; 3. None.

Black, S. N., Clayton, Adams Co.—1. 35; 2. No honey; 3. None.

Blunier, Peter, Roanoke, Woodford Co.—1. 51 in spring; 2. Very poor; 3. About 200 lbs. so far; 4. good quality.

Cadwallader, D. A., Prairie du Rocher, Randolph Co.—1. 27; 2. Medium; 3. 500 lbs. estimated; 4. Yes, clover and basswood.

Cole, G. W., Canton, Fulton Co.—1. 24; 2. Very poor; 3. About 60 lbs.; 4. No. 1. I saved one swarm—two went on a strike.

Covell, C., Buda, Bureau Co.—1. 35, and have the care of others; 2. Not good, very dry, and little prospects of fall bloom; 3. Not any, on an average enough for winter stores; 4. Is basswood.

Dadant & Son, Hamilton, Hancock Co.—1. 350; 2. None; 3. None; 4. Will have to feed for winter.

Dale, Peter, Granville, Putnam Co.—1. 135; 2. Very slim; 3. About 50 lbs.; 4. Yes.

England, P. J., Fancy Prairie, Menard Co.—1. 26; 2. Poor; 3. 25 lbs. extracted; 4. No. 1.

Everett, J. D., Oak Park, Cook Co.—1. 34; 2. Fair; 3. 158 lbs.; 4. No.

Flanagan, E. T., Belleville, St. Clair Co.—1. 250; 2. Poor; 3. None;

Hambaugh, J. M., Spring, Brown Co.—1. 130; 2. Exceedingly slim; 3. 2500 lbs.; 4. $\frac{1}{2}$ dark, $\frac{1}{2}$ better, but not No. 1.

Hayck, Bernard W., Quincy, Adams Co.—1. 25; 2. Not good; 3. So far not enough to winter my bees on; 4. Not No. 1.

Highbarger, Leroy, Leaf River, Ogle Co.—1. 80; 2. Very poor. The worst drouth ever known; pastures all burned up; 3. 100 lbs. clover, basswood, and honey-dew. Bees are doing nothing now; 4. Clover and linden, No. 1.

Little, Wm., Marissa, St. Clair Co.—1. 60; 2. For fall crops, fair if rains fall; 3. My crop ruined by honey-dew; 4. Good for nothing but bee-feed.

Miller, Dr. C. C., Marengo, McHenry Co.—1. 202; 2. Nil; 3. Nary a drop.

Phelps, Adam, Springfield.—1. 28; 2. Poor; 3. Not a drop; bees on a strike.

Poindexter, Geo., Kenney, Dewitt Co.—1. 90; 2. Very poor; 3. 50; 4. Not No. 1.

Poindexter, Jas., Bloomington.—1. 50, and 30 nuclei; 2. Think will get the bees summered safely; 3. No surplus; 4. Basswood mostly.

Robbins, Geo. F., Mechanicsburg, Sangamon Co.—1. 79; 2. None so far; 3. No surplus, only enough to fill brood-nest; 4. No. Chiefly honey-dew.

Smith, J. Q., Lincoln, Logan Co.—1. 62; 2. Poor; 3. 200 lbs. alsike clover; 4. No. 1.

Snell, F. A., Milledgeville, Carroll Co.—1. 112; 2. Not very flattering; 3. About 600 lbs.; 4. No. 1.

Vandenburg, P. E., Jerseyville, Jersey Co.—1. 38; 2. Poor—no surplus; 3. Not any surplus; 4. Don't know.

Van Meter, W. M., Era, Cook Co., Tex.—1. 8; 2. Not good on account of drouth; 3. About 100; 4. Very good.

Vibert, F. C., Hockanum, Conn.—1. 7; 2. Very poor—the severest drouth ever known is the cause; 3. 24 sections from two colonies taken July 1st; 4. No. 1. As fine as I ever saw.

Whittlesey, E., Pecatonica, Winnebago Co.—1. 71; 2. Very poor; 3. None in sections; 4. No white honey—clover, linden, and honey-dew mixed. No No. 1 honey in this part of the country.

Bradfordton, Ill.

JAS. A. STONE, Sec.

CANDY FOR QUEEN-CAGES.

SOMETHING IN REGARD TO ITS USE IN AUSTRALIA.

By H. L. Jones.

I have noticed several articles in GLEANINGS recently, regarding the effect of dry climates on queen-cage candy, and it now seems to be the general belief that the loss in shipping queens long distances is due mainly to the behavior of the candy. I will give you a little of my experience in importing queens from America during the present season.

From one breeder I received 12 queens; but only one came through alive, and she was the only surviving inmate of the cage. With this consignment I'm sure the condition of the candy had little to do with the loss, as it was still

moist and in good condition. To test the matter still further I used what remained of it to provision cages in sending off a distant consignment of queens, and it fulfilled its purpose admirably. I received also a number of queens from other dealers; but with one exception all were dead. With these, too, the candy was in most if not all cases all right. The majority of queens were put up in large three-hole cases, and the loss in many instances was distinctly traceable to the fact that some bees had got stuck in the candy, and thus cut off supplies. A cage of this kind is not at all adapted for successful shipment. The candy (the weight) being all at one end, the cage will, on being tumbled into the mail-bag, in most cases settle with this end down, and thus on a three-weeks' trip across the ocean the bees, as they die off, will drop straight into the candy, and communication with the food is soon cut off. A shallow six or eight hole cage, one side ventilated and one side not, with at least two entrances to the candy, also some kind of guard to make it almost impossible for dead bees to roll into the candy, will give much better success. Of course, the candy could be placed at both ends of the cage, but this would necessitate a double supply and a larger cage.

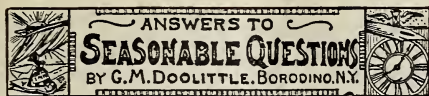
To give you some idea of the condition of the candy after passing through various climates, I send you to-day a queen in a cage of my own design. If she comes through all right, score one for the cage; but I hardly think she will at this time of the year, as her vitality will be pretty well exhausted by the time she reaches the United States; and the cold weather you will still be having will probably finish her off.

I also send you a sample of my Australasian mailing-cage, which is a slight modification of the old-style Benton; but I can assure you it is far more nearly infallible. Out of nearly 500 queens sent in it to all parts of Australasia already this season, I have not yet had a single loss. I have also sent out a number in your eight-hole long-distance cages, also several other kinds of cages, but not with the same success. You will notice that the passageways connecting the larger holes are cut clean away, and not simply bored, as with your old Benton; and in this lies the advantage. With the small bored passageway, one bee stuck in the candy is sufficient to block up the hole and cut off communication with the food; but with the entrances cut clean away, when a bee gets hurled into the candy by any sudden jerk there is still sufficient room for a bee to reach the candy, and usually the bogged bee is released before it dies. Now, don't say this cage is too large, as it goes anywhere for a penny (2 cents), and this is our lowest rate of postage.

I make my candy of best icing sugar (16 cents per lb.); warm the honey, and mix up as you have so often described.

H. L. JONES.

Goodna, Queen'd, Australia, Feb., 1894.



FERTILIZING QUEENS IN CONFINEMENT.

Question.—What is the best plan of fertilizing queens in confinement?

Answer.—So far as I know, there is no practical method of fertilizing queens except to allow them to have their own way, as they have had ever since God placed the little busy bee on the earth. And, furthermore, I do not believe that any successful plan has yet been discovered. After trying faithfully all the plans ever given, only to fail, I feel that I am excusable in saying that I doubt the truth of any one having a queen fertilized in confinement, and believe that those who claim to have succeeded have either deceived others or are deceiving themselves by careless experiments. They may think that they have succeeded in having queens fertilized in that way; but for all that, the chances are that the queen was fertilized as all queens are, when not known by the experimenter. Nature, for various reasons, has provided that the queen should meet the drone in the air, unrestricted by any thing; and they insist on doing as nature has provided, or in not mating with the drone at all. I am often surprised at the amount of money thrown away on plans which were thoroughly tried and proved to be an entire failure years ago. One man wrote me some time ago that he was ready for the money I offered for a really practical plan by which queen-bees could be mated to any desired individual drone, with no more work than was necessary with our domesticated animals, for he had a plan that would fill the bill. I wrote him that, before I parted with my money, I should require that he give me a brief outline of his plan, so that I might judge of the practicability of it, and whether it would come under the specifications regarding the amount of work required. When the reply came, his plan that would "fill the bill" was no more nor less than the one tried by Bro. Root years ago; namely, that of building a large glass house or greenhouse, and setting the hives having the queen and desired drones inside for a few days, when they were to be set out and another set in its place. "In this way," said he, "I have had several queens become fertile and go to laying." When I wrote him that his plan was an old one, and that, in all probability, his queens went out to meet the drone either before he set them in the greenhouse, or else after he took them out, he wrote back denouncing me in any thing but gentle terms, and claiming that I did not mean to give any thing for any plan. Another writes me that he has a new plan which he is going to put into operation next year; and when asked

to outline the same a little he very reluctantly gives, enjoining the greatest secrecy, the oldest and most tried plan of any—that of a large tent or house made of wire cloth, in which to set any colony having the desired queen and drones. When written to that his "new" plan was one of the oldest, and had been tried by scores, only to fail, he can not think it possible, and says he is still inclined to doubt the truth of my statement, and will rig a wire-cloth house and try it, in any event. Of course, if any insist on trying such a thing, after being cautioned, there is no law of the land to hinder their doing so. I find that the persons who believe success just ahead of them along this line are beginners; and the reason for noticing this query at all in this department is with the hope of saving some from throwing away their money on plans for fertilizing queens in confinement, which do not have even a shadow of success in them.

REARING QUEENS.

Question.—I have decided that every colony that is intended to be run for comb honey next year must contain a queen of this year's rearing. I desire good queens, that my stock may not deteriorate. In view of the foregoing, what plan can I follow in order to produce the best results for a series of years?

Answer.—I can not conceive what line of argument could have been used to bring the questioner to a decision that he would not allow a queen over a year old in his apiary, which was to be run for comb honey, and can not help thinking that, when his experience accumulates, he will find that his decision is not well founded; for queens which are in their second year do fully as good work as younger ones, where the colony is worked for comb honey, and often are equally good the third and fourth year. Besides, I find, as a rule, that the bees will supersede their own queens as soon as they begin to fail to any appreciable extent; and when the bees undertake this work it is done much more satisfactorily, all things considered, than it is when the apiarist attempts to say, "This shall be," or, "This shall not be."

But if you think you must have your own way, then there is probably no better plan than to follow Willie Atchley's way, as has been given in GLEANINGS during the past year or two. If you think this too much bother, or consider it "fussy," as some claim, then you can rear pretty good queens in this way: Kill the old queen and let each colony rear one from her brood. In five days from the time you killed the old queen, open the hives and look for queen-cells. In doing this it is well to shake the bees off the combs so that the cells can be easily discovered. If any are found capped at this time they should be destroyed, as they will contain larvæ that are too old to make good queens. Bees do not cap over a cell containing a good queen larva, as a rule, in less

than six days from the time the mother-queen is removed. The reason for this lies in the fact that bees rarely miss their queen to a sufficient extent to start cells in less than two and a half days after her removal; and if you find cells sealed over on the fifth day after the removal of the old (or mother) queen, you may know that the larva in said capped cell must have been three and a half days old when the bees undertook to change it to a queen. All queen-rearers agree that larvæ two days old and under give the best queens, and that a larva older than three days should never be used under any circumstances, if we would have queens which can be to any extent called good. Of course, the colony is to be well fed, if no honey is coming in from the fields, until the sixth day, or till the cells are capped over.



THAT IMPROVEMENT OF THE ALLEY TRAP.

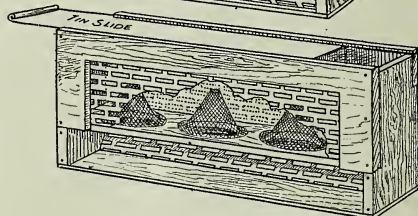
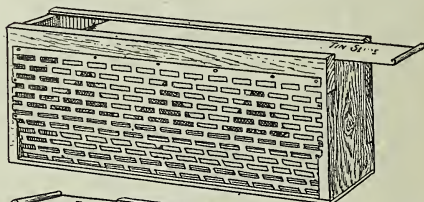
By Henry Alley.

About the first thing that met my eye on opening *GLEANINGS* of Aug. 1 was the article describing an alleged improvement of the Alley trap. The editor has an idea that Mr. Harrison's "improvement" is original. So far as catching drones on entering the hive, it is new; but so far as covering the front of the trap with metal, it is *not* new. Not less than fifty bee-keepers have made this same improvement since the trap was devised. When I pointed out to them the objections to such an arrangement they saw at once that the improvement was not much of an improvement after all. I have a trap in my office that has been in my possession about seven years, just the same thing as Harrison's, except the part of catching drones from the outside. The man who left the trap with me had just come from Washington where he had been to get his *improvement* patented. He was told that another man had a patent on the same thing. And that was the last I ever heard from that particular improvement.

Well, now, the objection to a trap arranged as Mr. Harrison's is—that is, with the front covered with perforated metal—is this: When the bees return from the field they enter the trap instead of going through the metal at the entrance and direct into the hive. There they lose much time in trying to find their way out. Now, this same arrangement of covering the front of the trap has been suggested by a hundred bee-keepers. Of course, I had tested the same thing long before any one else had thought of it.

The first traps sent out in 1882 had a perforated slide in the top. Then that had to be discarded, as bees would enter the trap in that way, and could not find their way out for a long time. I do not consider the arrangement to catch drones going into the hive of any practical value, or even needed in the trap, to say nothing about its being an improvement. If the trap catches drones when they attempt to leave the hive, of what use is it to have an arrangement to catch them the other way? If such circumstances should ever occur that one would like to catch drones entering a hive, then the thing to do is to reverse the position of the trap, and the thing can be done as well as if not better than by the Harrison arrangement.

But Mr. Harrison says his device gives better ventilation to the hive than my trap. It seems



to me that he has not seen our improved trap, such as we have been sending out for the last two years, or he would make no such claim as he does. Not only is the front part of the improved trap covered by metal, but a part of the back as well. If bees enter the trap as now made they do not spend any time in trying to find their way out, but pass directly through the trap into the hive.

Then, again, the bees can leave the hive by passing through the upper part of the trap as well as by the regular entrance. The improved trap not only admits of all the above advantages, but makes it impossible to so place the trap on the hive that the bees can not find their way out. But if I understand the Harrison arrangement, it has the same defect the old-style Alley trap had. That is, unless care were used in adjusting the trap to the hive, the colony would be closed in and soon smothered. This can not be done with the improved trap. As thousands of the readers of *GLEANINGS* have the old-style trap in use, I will instruct them how to apply the improvements above stated.

Saw out of the back of the trap about a third of the wood, say a piece 6 inches by 2½. Cov-

er the aperture with Root's metal. Nail it to the inside of the trap, as by so doing there will be a good large bee-space for the bees to pass up between the front of the hive and the back of the trap. The front of the trap should also be covered with metal. Now, if you have any traps on hand not nailed up, put in three of the wire tubes instead of one. All our improved traps have three tubes; and so sure as a drone attempts to leave the hive, he finds himself in the trap before he knows it.

I shall send one of the improved (old-style) traps to the editor, and may be he can illustrate the improvements so that all will better understand them.

Wenham, Mass.



And there shall be no night there; and they need no candle, neither light of the sun; for the Lord God giveth them light: and they shall reign for ever and ever.—REV. 22: 5.

We got such an onslaught of articles on the tariff question, that we found it absolutely necessary to bring the discussion to a close. The subject is too redhot for our columns; and, besides, it is quite apt to run into politics only, with no reference to bees, and, we are sorry to say, bitter feelings toward those who hold opposite views are apt to be engendered.

It may not be amiss to remind you who are using the Hoffman frames for the first season, that propolis, during this time of year, acts the worst it ever will; and that, after the frames have been in use for two years, and the edges covered with old propolis, *new* propolis, of the disagreeable, sticky kind, will not be deposited so freely. In fact, the two-year-old Hoffman frames work nicer than the first year, along in the fall.

CONTINUOUS ADVERTISING.

We find the following good advice in the *American Bee Journal*; and if you have an advertisement that does not pay, please read carefully what Editor York has to say. Possibly it may explain the trouble:

Continuous advertising, even if it be only a small announcement, pays the advertiser the best in the long run. Spasmodic advertising, like "spasms" of any kind, is unsatisfactory. To secure the very best results, year in and year out, you must keep your name and business before the public. Only by so doing can you hope to keep from being forgotten when the time comes that your would-be customers wish to purchase what they want.

Besides, in the fall of the year more agricultural papers send out large numbers of sample copies, and the advertiser fails to get the advantage of reaching the thousands who get the free sample copies, unless he keeps his advertisement running

all the time. This is a matter worth thinking about. Heed the lesson taught by that intelligent comb-foundation firm, Chas. Dadant & Son, and also others, whose advertisements are found in *every* number of the *Bee Journal*, without a single miss.

ANOTHER BICYCLE TOUR.

It is not to be, but is already partly a thing of the past. Why didn't we give notice? We could not tell exactly when we could get away best, or what route we would take. Briefly, this is the one so far taken: Mounted on the Victor Flyer, we halted, after a few miles' ride, at the apiary of Vernon Burt. Again resuming the saddle we hung to it till we reached Boardman's, at East Townsend, near Norwalk. We stayed so long here that we had to take the train for the last 30 miles, *en route* for Toledo. Nevertheless we covered on the wheel, besides the stops, 75 miles. We stayed at Dr. Mason's over night, and the next morning wheeled to Detroit, stopping on the way to hunt up certain obscure bee-keepers. This day's run was 70 or 80 miles. Next day found us at Bell Branch, the home of M. H. Hunt. We lost the way, and ran needlessly some seven or eight miles out of the road. Again we are in the saddle, with M. H. Hunt for a pilot, to see that we get started right this time. We then left him and reached Flint—the last part of the journey having to be completed on the cars by reason of the impassableness of the roads for sand. This latter article was so plentiful for the rest of the way that we took the train for Lapeer. We now start from Manistee to Chicago by boat; and from this point we shall resume the use of the wheel—for what points we shall learn later, for *we* don't know yet. We shall never—no, *never*—attempt on the wheel to ride over sandy country again.

We have picked up on the way many interesting things, and later on will try to give them to you under Notes of Bicycle Travel.

We find so far on the route that the honey season, while better than last, has been rather poor. Every thing, except the lakes, seemed to be parched in drouth. As a consequence, smoke and fire are getting in some of their work.

THE ST. JOSEPH SOUVENIR.

WELL, what is that? Imagine that you have in your hands a book 15 inches long, sidewise, and 11 inches from top to bottom, containing about 150 pages, and you will have an idea of the outward appearance of this work. How about the inside? That consists partly of elegantly printed half-tone views of the principal buildings and other points of interest in that stirring city known as St. Joseph. The title-page is a view of the city itself, 35 inches in length. As no camera would take so large a view, the wonder is how it was done. Five consecutive "shots" were taken, each time pointing the camera a little further to one side, taking in the whole range of view. These neg-

atives were then half-toned, and the plates fastened side by side and printed. This gives a most comprehensive view of the city, and the sides of the picture are as clearly printed as the middle. Besides all this we have a multitude of half tones showing the representative men of that city, with short biographies of each. We know of no city of its size that has taken so much pains to give to the outer world an idea of its appearance as St. Joseph. It is in every sense creditable to the city and to the projectors of the work, and can not fail to be of great interest to all who contemplate taking in the convention next month. Judging from the picture, we think St. Joseph will be a capital place to hie to during October—the finest month of the year. We do not know the price of the book; but it can be obtained of the News Publishing Co., St. Joseph, Mo.

PROPOLIS; HOFFMAN FRAMES IN THE FALL;
DISAGREEABLE HYBRIDS; A SCHEME FOR
FINDING HYBRID QUEENS, THAT DID
NOT FULLY MATERIALIZE.

At our basswood yard we have three very strong hybrid colonies, each occupying three eight-frame stories. The bees are very cross; but after the honey-flow we decided to change the queens. When we came to hunt them up we found we had a job on our hands indeed. Like simon-pure hybrids—if, indeed, hybrids can be called pure—they stung, boiled all over the frames and over the sides of the hives, and the queens, of course, could not be found without spending more time than we cared to take. We concluded that, in all three of the colonies, the queens must be in the two upper stories. Accordingly, after lifting those off from one of the colonies (my! but they were heavy with honey), we put on the bottom story, perforated zinc honey-board, and the Porter bee-escape. This we did with the other two. "Now," said we, "if the bees will only desert their brood, and go through this bee-escape, the queen will, of course, go too. When past the bee-escape she will be in the space between the honey-board and the escape-board, and trapped for easy execution. We had some misgivings; and accordingly, in 24 hours, we went down to see how things worked. The upper stories were thinned out some, but not enough to justify us in hauling them over again in what might be a fruitless attempt to find the queens. Forty-eight hours more elapsed. As we had not time to go down we sent our apiarist. There were still some left in both upper stories; and the bees in the lower story broodless and queenless, and nearly starving, were howling mad. There now being fewer bees in the way, the queens were captured and executed according to the decree, but were not neatly and automatically imprisoned, as we had planned in the first place. Even if the hybrids were as gentle as flies, they propolize things so that it

is exceedingly disagreeable to work with them. Why, it was all we could do to pull apart one story from another; and there were no burr-comb attachments between them either; and as to removing the cover, it takes nearly the full main strength of a good average man. "Oh, yes!" you say, "I would use enamel cloth." But your covers would blow off, and then you have that much extra expense in the useless cloth. The best solution of the trouble is to keep pure Italians or Carniolans.



H. L. JONES, GOODNA, QUEENSLAND, AUSTRALIA.

For the last ten years, with increasing frequency, the name of H. L. Jones has appeared in this journal as one of the rising lights in apiculture in that far-away land where they have their hot days in December. Thirteen years ago friend Jones was not worth a penny, in a financial sense; but, being possessed of pluck and perseverance, he resolved to see what he could do with bees for a livelihood. At this time he was only fifteen years old. He has now one of the largest and most successful trades in bees, etc., in the southern hemisphere. Without borrowing a cent of capital, friend Jones has now a business worth several thousand dollars, and his trade is constantly increasing. We have always found him to be a prompt business man, and our good opinion of him, which we had at the first, has increased as we have known more about him. We are glad to present his picture to our readers.



LAKESIDE.

And there shall in no wise enter into the city any thing that defileth, neither whatsoever worketh abomination, or maketh a lie; but they which are written in the Lamb's book of life.—REV. 21: 27.

The gate leading into the Lakeside grounds is on a sidehill; and it is so wide that I did not notice the inclosure at all. It is true, a young man stood by the side of the way, and as I passed him on my wheel I noticed that he raised his hand. I regarded this as a sort of salutation, and touched my cap to him as I passed by. Pretty soon it began to be evident, however, that I was inside the grounds. Had it not been downhill I should have stopped a little sooner; but the light wheels nowadays do not have brakes. I finally fetched up, and walked back to where the young man stood, and asked him if he wanted me. He said he simply wished to ask me if I had a ticket. Said I, "But, my good friend, suppose I did not have any ticket. Do you let everybody go in free who does not turn back as I did?"

"Well, people who come here do not, as a rule, want to go in without a ticket, even if they can. I did not feel at all troubled, for I was sure you would come back."

That was the first glimpse of the way things are done at Lakeside, and to me it was a revelation. I ran around the grounds for a little while in order to see what Lakeside is like, and then I turned up by the W. C. T. U. headquarters, and made inquiries in regard to board and lodging. The rooms were pretty well taken up; but a very pleasant, motherly woman soon showed me a room I could have for 25 cents a day. Of course, we did not get much style for such a small sum. There was a clean comfortable bed, mosquito-netting over the windows and door, and, in short, all that was needed for a sleeping-apartment at this season. In order to have it cool and airy during the sultry August weather, the rooms were all open overhead. There were partitions that did not go up higher than one could well reach. I remarked to my attendant, that, if anybody were disposed to "break through and steal," he would find very little hindrance. She replied that so few vicious people ever came on to their grounds, or wanted to be in such a place, that they left their clothing and even valuables wherever it seemed handiest, and it was very rare indeed to hear of any thing being stolen. I noticed afterward that rocking-chairs, hammocks, and various articles of apparel, were left outdoors all night. Nobody seemed to be troubled about missing any thing.* Services were being held at the time in the Auditorium, and I looked around for a place to put my wheel while I went to meeting. All around the Auditorium are little shops and stores. For instance, there is a bakery, general office, meat-market, grocery, dry-goods store, shoe-shop, etc.; and all those things that are likely to be needed are close at hand. Among them I noticed a good-

sized room where parcels could be checked. I asked them if they could take charge of my wheel. "Oh, yes!" said the young man who was in charge. "Just set it back there and it will be perfectly safe." However, I felt a little anxious, and asked him if he could not put on a check. He said he could, and did so. The charge was only a *nickel*. When I told him I might wish to leave it a couple of days he said it would make no difference. Moderate charges for every accommodation seems to be the rule all over Lakeside. In passing a locomotive, just before I arrived at the grounds, a piece of cinder flew into my eye, and it became so painful that I finally called at a doctor's office. He removed it, and applied some eye-water to allay the irritation; he also looked after the eye that day and the following; but the charge was only 25 cts. Very good meals may be had for 20 cts.; or you can go to the bakery and buy what you choose, taking nothing and paying for nothing that you do not wish. Or if you desire to live cheaper still with a little coal-oil stove, you can buy whatever you need at the butcher-shop, fish-market, bakery, etc., and live about as cheaply as you can at home. Come to think of it, you can have many things even cheaper than you can get them at home. I greatly enjoyed having an abundance of excellent fresh fish during my stay on the grounds. Right near the Auditorium are three tanks of ice water. A pipe runs away out into the lake, and a steam-engine pumps up water, which is distributed all over the grounds through appropriate pipes. As these pleasure-grounds are in use only during the summer time, the pipes lie on top of the ground. These pipes sometimes become very warm in the sun, especially those that are not drawn upon sufficiently to keep the water moving; and there were quite a few jokes about having *hot* water at Lakeside free of charge; whereas, if you want *cold* water you must either go to the public drinking-places or purchase ice. I happened to want a piece of ice before I retired at night. After riding the wheel all day I usually become very thirsty. The keeper of the restaurant gave me a piece as large as a small pitcher. When I offered him a nickel for it he refused to take any thing, saying that ice was very cheap around there.

In the Auditorium they have the very best talent to deliver the addresses, on a great variety of subjects. But the 25 cents a day you pay at the gate covers the admission to all meetings, concerts, etc. During the first evening a concert with quite a long program was held. We first had music by an excellent band, in the open air; then we had various kinds of instrumental music in the Auditorium; a celebrated lady singer from Boston; a violinist of much repute; the *Eolian Quartette*, from Delaware, O., and many others. I mention these things to show the general spirit of the place. On my wheel-rides, especially when I visit places of summer resort, I become so accustomed to extortion and greed that I have begun to take it as a matter of course. Here at Lakeside there was such a marked difference that it really seemed like a glimpse of heavenly things here on earth. Let me digress a little to explain my meaning.

One day last week I visited a celebrated resort on the banks of a beautiful lake. After my wheel-ride I thought I would enjoy a good full dinner. Besides, I felt as if I ought to patronize the people who had taken so much pains to put up an attractive-looking hotel. I went up to the desk and asked the clerk where I could leave my wheel while I took dinner. He opened the gate and suggested that, for safety, I just push it inside. I thought this very kind

*At the time of the conversation above, the state of affairs at Lakeside was about as my companion stated; but the morning I left I found some one had taken a valuable hammock during the night. The thieves were heard, and they went in the direction of the broken fence, mentioned hereafter; so it would seem that, even if property does seem safe at such places, it is well to keep the inclosure in good repair. We should be careful how we invite thieving by any slipshod or unthrifty habits.

of him, and thanked him. Then he quietly remarked he guessed he had better give me a check. I told him that, as it would not stand there more than fifteen or twenty minutes, I did not think he need to take the trouble. However, he put on his paper check; and then as he extended to me a bit of pasteboard, with the usual insinuating smile, he said, "Ten cents, please." I question right here whether a hotel-keeper has a right to charge you for checking your wheel any more than he has for checking your overcoat. Never mind. Ten cents is only a small matter, after all. But I paid 50 cents for a 25-cent dinner; and I could not get even the 25-cent dinner without repeatedly urging the waiters to bring me this, that, and the other. At first they did not see me at all. Then they had a habit of forgetting what they went for. There, there! I think I have found fault enough. I feel a little ashamed of myself after saying what I have said. But I wish you to notice the great contrast between the way they do things at Lakeside and the way they do them where the only inspiring motive is to get as much money as possible with the least expense and exertion possible. There, I have put my foot in it again in that last sentence, I fear. The speech is not Christianlike, and it is *somewhat* of an exaggeration. Well, I think I have got through, at least for the present, finding fault with such accommodations as we find in traveling.

At Lakeside they have a great hotel also. It is an immense building, and it has all the conveniences of hotels that charge three or four dollars a day. I say *all* the "conveniences." I mean, so far as I am concerned. There was not any bar for liquors attached. There was not any case of cigars close to the desk. There were no nasty spittoons, and there were no loafers chewing and spitting, and puffing tobacco smoke in your face. The office was a clean and tidy place, with lots of pure air, and a general atmosphere of purity that to me was indeed refreshing. Not only was there no tobacco smoke, but I did not hear a single vile or uncourteous word during my stay. When we approached the dining-room, even though there were large crowds, a pleasant woman directed each one to a place at the table; and she did it with an air of refinement and cheerful hospitality such as you might find if you were to go and visit your own sister whom you had not seen for years. Then another young woman, of equal refinement and gentility, either waited on you at once or informed you she would be at leisure pretty soon. Every thing on the bill of fare was exactly what it purported to be; and the cooking was like *home* cooking. I do not know whether all the waiters and clerks at Lakeside Hotel are professing Christians or not; but to my mind they came very near being Christians in their behavior, even if it should transpire that they do not belong to any church.

One thing that pleased me at Lakeside was, the little cards told you beforehand what every thing cost; and nowhere did we find any excuses made for charging more than the price agreed on. There was also a pleasant sociability that I greatly enjoyed. People bantered each other pleasantly, who were perfect strangers, even though there were three thousand or more on the grounds at the time I was there. There were old gray-headed people sitting in their arm-chairs, and enjoying the lake breezes, while they talked over old times, etc. There were great numbers of children paddling like ducks on the sandy beach, playing all over the grounds, and I did not hear any quarrelling or hard words. It seemed to be the fashion at Lakeside to be pleasant and good-natured.

There was lots of fun and merriment—in fact, all kinds of games and pastimes were going on—that is, all sorts of *innocent* games. A good many of the small boys were dressed so that they could live like the frogs—in the water or out of it as the spirit moved; and a favorite joke down on the pier was, to pretend that one of the boys had been pushed overboard, especially when one of the large steamboats was unloading passengers. After a chill had gone through the crowd to think somebody had fallen off into the deep water, a mischievous urchin's face would emerge from the depths beside the pier. You could see the grin on his face before he came to the surface. One boy happened to go down head first; and when he struck the water his head pushed out the crown of his hat. This forced the brim down on his shoulders, so when he came up his eyes were just twinkling above his hat where the crown used to be fastened on.

I now wish to explain that my mission to Lakeside was to meet with the Ohio Antislavery League. We had stirring addresses from the representative speakers of all the temperance societies in our land; and these addresses, characterized by the same courteous bearing toward all, made me feel that Lakeside was quite different from the rest of the world. I have not space here to give even a summary of those talks. But I wish to give a few sentences from an address by the Rev. James Brand, of Oberlin. For many years of his life he has been an active, stirring exponent of temperance; but he belonged to the Republican party. He said, during the years when he was a Republican he was greatly pained by the harsh and unkind speeches that were made because of his politics. Those belonging to other parties told him that he did not vote as he prayed; and some went so far as to intimate that he could not be a Christian and vote a Republican ticket. After studying and praying over the matter for several long years, and after being for quite a length of time "on the fence," as politicians term it, he finally decided to support the Prohibition party. He said he thought he had been unkindly treated before, because he did not see things exactly as others did; but when it first came out that he had united with the Prohibition party, one of the nearest and dearest friends he had on earth said to him, "Mr. Brand, you are a pig-headed, consummate fool." The point he made was this: There seems to be no *escaping* these harsh, uncharitable flings. No matter *what* party a man belongs to, he must meet them. Is this right? Is it brotherly? Is it Christianlike? With the progress that is being made everywhere else, ought we not to rise above such foolish, narrow-minded, harsh judgments? The whole tenor of the addresses seemed finally to run in this line. People from all political parties, and great leaders from all temperance societies, united in a determination to work against the saloon without questioning a man's individual convictions, or asking what political party he supports. It seemed to me as if Lakeside was just the place to encourage such sentiments.

Before closing I wish to mention a little conversation I had with one of our former pastors who was spending his vacation, and recruiting, at Lakeside. I happened to remark that the fence surrounding the ground was in many places in very poor condition. Pickets were off, and one could, if he chose, get in without going to the gate and paying 25 cts. Rev. Mr. Plass, my companion, suggested something like this: "Brother Root, does not this point out a significant fact? If somebody should succeed in getting in here by crawling through the

fence, would he feel at home, or satisfied? Would he not find the company so uncongenial that he would very soon be sneaking out in the same way he got in? And may not this thought give us a glimpse of something what heaven will be like? Is it not true that there is a class of humanity that would not be satisfied with heaven? They would find nothing congenial, and they would want to get away if they should by chance get in."

And there shall in no wise enter into the city any thing that defileth, neither whatsoever worketh abomination, or maketh a lie; but they which are written in the Lamb's book of life.—REV. 21:27.



HOME FROM LAKESIDE.

The steamer dropped me at Sandusky about 8 o'clock in the morning. You may remember that, on my way up, I got into Sandusky just as the steamer was about to leave the wharf; and, although I did not have any time to spare, my eye caught sight of some exceedingly beautiful foliage plants on the public square of Sandusky, besides some dainty little beds of color down near the steamboat-landing. The day was exceedingly hot, dry, and dusty; but these little bits of green lawn, with ornamental foliage plants, with their beautiful colors, fresh, bright, thrifty, and luxuriant, seemed to me like bright oases in the desert. Well, on this, my return trip, I had more leisure to examine them. I do not know the names of all of those plants, but there was a little low border of bright red; then some beautiful specimens of coleus, and the whole was set off by some brilliant tufts of what we used to call "prince's feather." We have all seen these before; but in Sandusky they have them arranged with an artistic effect that gave me a thrill of delight as I looked upon them. One trouble in having these foliage-beds, or ribbon-beds, in private homes is, that they must have constant watering through the sultry months; and unless somebody is employed to see to this, they are very apt to be neglected. May be I had become wearied in looking at the wonderful things at the World's Fair; but, so far as I can recollect, there was not a piece of work there to compare with these little bits of artistic beauty in the city of Sandusky.

My first point was Castalia, Erie Co. The road is very fair (most of the way over a stone pike), except that the loose stones were so numerous that it took nearly all my time to keep my wheel clear of them; so I did not have much time to enjoy the views of the surrounding country. I remembered one of the old bee-friends at Castalia; but they told me he was three or four miles out in the country, off from my road. As I wished to make a train in the afternoon, I went through rather hurriedly. I noticed a millpond full of water, which looked a little singular when every thing else was so dried up; but I did not stop to inquire about it very much.

In almost all the little towns I pass, I find a crowd of men in front of some corner grocery. I presume I ought not to find fault, as these crowds of men are very convenient, and are quite willing to answer all my questions in regard to routes, etc. I told them I wanted to go to Green Springs, and I wished to avoid the sand as much as possible. After some dis-

cussion they decided that I might take any one of three ways; but they said that, whichever way I took, I would be sorry I did not take one of the others, especially on account of the sand. It was at my tongue's end to ask if there were any remarkable springs in the vicinity; but I finally thought I would not, and rode on. They were right about the sand: it was just fearful; and the road twisted in unaccountable ways around the hills until I lost all idea of the points of the compass. As a matter of course, I became very thirsty. But the water at the wells was all exceedingly hard, and I knew from the taste that it would make me sick. How I did long for a spring of soft water, or a spring of any sort, for that matter! I have always found running water to be more wholesome than any thing from the wells, as a rule—that is, where I can find the water running just as it comes from the ground.

Clyde is a very pretty town indeed; and just in the outskirts, on the road to Green Springs, I saw about the prettiest garden that ever revealed itself to my gaze. The remarkable thing about it was, it was absolutely free from weeds, and the ground all looked as if it had been stirred that very day. During a time of severe drouth, such sights are refreshing indeed. The only person at work was an elderly woman. Very likely she had charge of the garden, and that was why it was so neat and tidy. Quite a spacious greenhouse adjoined it. But my time was too limited to stop. A little further, and the great sanitarium in a beautiful grove on a gentle hill revealed itself to my view. I wheeled in and coursed through the walks and drives, and finally brought up before the wonderful spring that has given the locality and the town their name. In a little notch between the hills was a miniature pond of water, transparent as crystal, but the transparency was an emerald green. In the deepest portion a crevice was visible in the rock, from which issued a considerable stream of water. The rate and volume of the current were evident from the sticks and weeds near the orifice where the water issued. Although the water above the crevice was said to be 17 feet deep, I think a pin could easily have been seen at that depth. The most beautiful thing about this wonderful spring is, that a sort of mossy vegetation that covers the bottom is incrustated with a mineral matter, shading from silver to gold. It looks like hoar frost of varying shades. One does not realize how rapidly the water is moving, however, until he looks at the outlet, where a good-sized stream pours forth. In fact, I am told this stream, a little lower down, turns a gristmill day after day; and the volume is sufficient to do it without the intervention of any pond or reservoir whatever. I had a great curiosity to taste these wonderful waters. There is a strong sulphur flavor, it is true; but to me it was very pleasant, especially on account of its delicious coolness. The more I tasted it, the better I liked it; and when the clerk at the sanitarium assured me that *anybody* could drink just as much as he pleased, under any circumstances, without danger, I ventured to drink a little more than I should have done otherwise. This water is said to have wonderful curative properties. I could readily believe this to be the case where somebody happens to need a good dose of the minerals contained in the water. In fact, I am pretty sure I should find lots of health and enjoyment in staying there a week, and drinking and bathing in those wonderfully medicated waters—medicine from God's own laboratory. I found, however, I had fully 30 miles to make to reach the station to enable me to get home that night.

Before I left the town of Green Springs, however, I was told that, almost on my route, was a similar spring not more than a mile or two away from the one I had visited. I found it, out in the fields, beneath the branches of a spreading white-oak. One could scarcely believe that such a beautiful spring was to be found in that field; but just as you pass the oak-tree the ground dips down suddenly, and a dark-green pool with a swift-running stream meets your gaze. I knelt down on some rails placed over the spring, and dipped the water up with my hand, and drank again and again. I am afraid I drank still another "again," come to think of it. Then I hustled off for my station. I passed through the towns of Republic and Bloomville, Seneca Co., and reached Lykens just at the time the local freight was due. I had ridden fully 50 miles without having had a particle of lunch of any sort, unless you might call the water of Green Springs a lunch. Some way I did not feel very hungry, neither did I feel tired. I had enjoyed every mile of the whole fifty—yes, even the worst sandy miles. I arranged to have some dinner at a house near by the station, the agent kindly agreeing to notify me when the train was heard coming. Well, I not only got my dinner, but I sat on the platform and waited *three hours* because the local freight was behind time. It was 65 miles to my home. While sitting on the platform I could have made fully half the distance on the wheel; but I expected to get home that night, providing the train was on time. Fifty miles and 65 miles make 115. I calculated that, if the railroad company would give me a lift of about 35 miles in the middle of my ride, I should make it easily. I did not get home, however, until the forenoon of the next day, and then I lay abed a part of two days as a result of having drank too deeply of the waters of—not Lethe, but from the matter-of-fact Green Springs. May be I am blaming Green Springs more than they deserve. Perhaps it was the limestone water I drank while so very thirsty, and may be it was the consequence of riding 50 miles without food. Still again, it might have been eating too many luscious pears that a good lady was kind enough to offer me when I could not drink the well water because it was so hard, nor the cistern water because it was so bad-tasting. Never mind. Could I have had an abundance of soft spring water all along my route, I think I should not have been sick at all. By the way, the clerk at Green Springs told me theirs was *not* the largest spring in the State of Ohio; for he said that, at *Castalia*, Erie Co., the very town I had passed through, there was an immense spring of remarkably pure soft water—so fine, in fact, that a large company is utilizing its cool pure waters for raising trout, and for carrying on extensive trout-fisheries, and yet I did not know any thing about it.

Is there not a wonderful chance to do temperance work along the line of pure water and drinking-places, and utilizing to the fullest extent God's gifts along that line? Surely *all* temperance organizations can unite in this. See the following from a recent Cleveland daily:

The drinking-fountain placed at the corner of Wilson and Euclid Avenues by Miss Anna Edwards, is daily proving its usefulness during the warm weather. It is doing very good work, and, from figures furnished by the police, it appears that at least 1000 persons drink from it during every warm day. The remark is frequently heard from the men who stop to drink, and who are largely workmen, that they have saved five cents which would otherwise have gone to the saloon, and which they can take home to their families.



TILLAGE! CAN WE OVERDO THE MATTER OF WORKING OUR GROUND THOROUGHLY IN DRY WEATHER, BEFORE PUTTING IN THE CROP?

Our readers may remember that, about a year ago, I spoke of the very thorough preparation friend Terry was giving his wheat-ground. In fact, when the ground seemed to me almost perfectly pulverized and firmed, he was still going over it with the teams, making it finer and smoother. I ventured the suggestion that he was overdoing the matter, especially as a farmer in our county said he got better wheat with ordinary preparation than where he made the ground so exceedingly fine and soft. Well, I have been watching that wheat ever since, and just now friend Terry gives me his report after thrashing.

That wheat you looked at yielded an even 50 bushels per acre. North lot, our poorest land, over 44; average over 47, possibly near 48, when we get cleaned up. Did I "overdo the tillage"?—2—9 or 10 bushels more than I ever raised before!

Hudson, O., Aug. 14.

T. B. TERRY.

The above is an important fact, and has a special bearing on this matter of preparing the ground for crops even now. In fact, we are just now preparing the ground for strawberries, pearl and multiplier onion-sets, spinach, winter radishes, etc. How much shall we work the ground during this dry weather? My opinion is that, where teams have nothing else to do, it will pay us to keep them going until their feet have been set on almost every inch of the soil.* The ground will show the advantage of it next season. I know from experience. When every lump has been mashed up, then the little roots can thoroughly explore every bit of the soil, and appropriate all the food they need that is in the soil. Besides, what a pleasure it is to put out plants or put seeds into ground that is fine, soft, smooth, level, and firm!

RAISING AND PROPAGATING RASPBERRIES.

The soil should be a rich light loam; but raspberries seem to do well on well-drained clay. Plow and drag as for corn or potatoes. Mark out 7 ft. one way and 3 the other. Furrow out with a big plow so as to give a level place for the roots. If you use a shovel-plow or marker only, the ends of the roots are apt to stick up. Make the mark from 4 to 6 in. deep. Set the plants in the check row, and cover about one inch deep. The plants are easily smothered at first. I have lost many by green hands covering too deep. When the plants come up you can cultivate the mellow earth in and around them until the furrows are full. This will make the plants stand up. If they are set too shallow you will be continually annoyed by their falling down, especially when loaded with fruit. We put beans or potatoes between the rows the first year. Keep the ground clean and mellow all summer, as the plants do most of their growing in August and September. If you are anxious to grow sets, pull out the crown when about a foot high; also pull off the ends of the strongest laterals when about a foot long; these in turn will branch and make many tips. Last week we

*Of course, this won't do at all where the ground is the least bit wet. In the spring of this year I have done harm by this very excessive tramping when the ground was not sufficiently dry to bear it.

put one horse to the big plow, and turned a furrow up to each row, and broke up the middle with a double-shovel plow. This buried the weeds, and put the ground in excellent condition for layering tips.

Although the ground is very dry we began setting tips Aug. 14. We used to cover the ends with a hoe, but had much trouble with the ends growing out. We now take a spade, set it in straight, press forward, put the tip in behind, withdraw the spade, and firm the earth with the foot. It is a waste of time to pull down and cover tips that have not yet reached the ground, as the wind soon works them loose. The old canes and weak new canes have all been cut out and burned. When all the tips are set, no more attention is needed until spring. This gives the berry-grower time to do something else 7 months in the year.

I teach school, as I have been doing for 20 years. Berries rest me from teaching, and teaching rests me from berries. Both are pleasant and profitable. I love the work; but truth compels me to say that the inspiration varies largely with the cash income.

The fruit-grower in general owes much to such men as my friend A. I. Root, who spares neither time, money, nor his wheel, in finding out and testing the newest varieties, and discarding, probably, nine-tenths of all varieties investigated; offers to all the results of his labor at prices far less, often, than he paid for sorts that proved worthless. A person of limited means need make few mistakes in getting a start in fruit-growing, if he will only read.

In the spring we take up sets as early as possible; trim back the laterals from 6 in. to 2 ft., according to size and vigor of cane; plow down the furrow we threw up for winter protection; cultivate thoroughly until the berries are nearly ripe. The fruit is less likely to be sanded if no more cultivation is given until after picking.

The first crop is always much damaged by the low bushes being beaten into the dirt, and the berries becoming sanded. This year we sold sandy berries at 2 cts. per quart less. You can wash them, but they never look so well. On this account, and because we never get more than a third of a crop the first year, I would never think of doing as Mr. L. B. Pierce suggests: Raise only one crop and then plow under.

W. R. GRANNIS.

Lodi, O., Aug. 15.

THE STERLING, TIMBRELL, AND OTHER STRAW-BERRIES, ETC.

Friend Root:—On page 668, Aug. 15, you say you would like to hear from parties growing the Sterling strawberry. I purchased of you the Sterling, which, I am sure, is true to name. Growing side by side with a berry here called Champion, which is largely grown in this neighborhood, I find they are the same berry in fruit, color, leaf, and flavor, under different names. I had them examined by a representative of Peter Henderson & Co. and Mr. E. Durand, an originator of many new varieties of strawberries. The Champion was originated from Soto 30 years ago. Mr. Durand came to the same conclusion as myself. I find they do excellently with me in rich heavy soil.

About the Timbrell, I have this to say: They are perfect in every respect but the color, which is worse than any berry I have, and I grow more than thirty varieties. I took a crate of the very best, went to New York city, and tried to sell them by their flavor; but every one condemned them before they tried them. Our fancy berries are sold by their looks. The Timbrell might do very well for private use. We raised our Timbrells in heavy soil, very heavily manured, and mulched with salt hay,

so that the ground is not at fault. This has been a very bad season for growing plants. We have not had rain of any account since last May. We practice fall planting almost exclusively, from about Aug. 15 to Sept. 15, and can see little difference in the yield the next season. The spring-set plants may have a few more berries, but the fall-set plants have better size. In fall we plant in double rows about a foot apart each way, and always take the plants from the plantings of the previous fall. In that way we always manage to get stronger plants than spring-set beds. If we are short of space we plow up an old bed after fruiting, put on fresh manure, and plant new strawberries on the same ground. There are some strawberry-beds around here where there have been nothing but strawberries for the last 20 years. This may not pay in localities where land is cheap; but land here is worth from \$500 to \$1000 an acre.

I read your favorable report of the Industry gooseberry. We grow Industry, Triumph, Downing, and Smith's Improved, side by side, but we like Triumph and a seedling of our own best. They have a smoother surface, and just as large a berry as the Industry. Most of our gooseberries are sold when green, and we never succeed in ripening the Industry naturally, as they all fall from the bush before being fully ripe, while the others, just as large, hang on until ripe. We sold large gooseberries, green, last year, at 20 cts. per quart by the crate, while this year the best brought only 14 cts.

We always read with interest your bicycle tours, and what you have to say on fruit and plant raising.

CHAS. MOMM.

Irvington, N. J., Aug. 19.



WHAT SHALL WE PLANT IN SEPTEMBER?

I presume the very general extremely dry weather has made gardeners as a rule a little disheartened; but it would not be strange at all if those who keep up their courage, and go right on planting as if the weather were favorable, should prove to be the ones that reach large profits. Let us see. We can put in Eclipse beets now that will be just right for table use before they are killed by frost. In a couple of weeks more it will be time to sow seed for cabbage-plants that are to winter over in cold-frames. Better have the ground ready, and have it near where there is plenty of water, so as to keep the plants watered if it does not rain.

Very large celery-plants can still be put out if you have rich ground, and water to keep them going. In fact, we have an order for 100 plants on hand now, to be shipped Monday, Aug. 27.

Corn salad may be sown now; and as it is very hardy it will grow nice salad through the fall, far into the winter, almost without protection.

Now is the time to sow your Grand Rapids lettuce seed in order to have it ready to market by Thanksgiving time. Start your seed where it can be kept going by plenty of water. The sub-irrigation plan, as used by the Ohio Experiment Station, works grandly with lettuce.

All kinds of radishes will produce a nice crop if sown now; but the Chinese Rose Winter is generally considered the finest for late sowing.

Spinach can be sown all through the month. If you can manage to get it almost ready to run up to seed before cold weather comes, it will keep growing larger during the cool chilly weather, and postpone sending up seedstalks until spring. If you can hit it just right, you may have spinach almost all winter, almost without protection.

Purple-top White Globe turnip will sometimes make turnips large enough for table use, if sown on good ground the first of September.

Last, but not least, now is the time to plant out all kinds of onion-sets. Since we have had such fine success with the American Pearl and the English White Multiplier, we have made experiments with other kinds of onion-sets, and some of them stand the winter nicely. We have on hand the following different kinds of onion-sets for September planting. These sets are of our own growing, and very carefully and thoroughly cured, and will reach our customers in excellent condition:

Winter (or Egyptian) onion-sets. The hardest onion known. Qt., 5 cts.; peck, 35; bushel, \$1.00.

American Extra Early Pearl. The finest early onion in the world, and perhaps the first large nice onion to ripen. Qt., 35 cts.; peck, \$2.25; bushel, \$8.00. At present writing, no other grower has published prices, so far as I can determine; but if any reliable seedsmen offers the genuine American Pearl at less prices than the above, I will make our prices to correspond.

White Multiplier. Pint, 10 cts.; quart, 15; bushel, \$3.50. We have now grown this three seasons, from sets planted in September, and have had no failure. Remember, the above prices are for small onions. These small onions produce big ones next season, like the Pearl, though some of them may split up and divide. If you wish to raise small onions or sets for sale, you will need to plant the large Multiplier; and we offer the large ones at just half the above prices. Our sets are all carefully graded by means of appropriate sieves. In addition to the above white onion-sets we have the White Victoria. These are much like the American Pearl, except that they are round instead of flat, and grow rather larger, and bear a little later. We are not as sure they will winter over safely as we are of the Pearl.

Yellow English Multipliers, or Potato-onions. These are like the White Multipliers, except that they are yellow instead of white. Prices will be just half those of the White Multipliers. Please notice, this brings the prices of the large-sized yellow Multipliers at only 88 cts. per bushel. Is not that cheap enough? The above prices are only for orders received before our stock is exhausted. When we are compelled to buy from other parties we can not agree to make the above low prices, especially on the Multipliers.

Yellow Danvers onion-sets. Qt., 20 cts.; peck, \$1.50; bushel, \$5.00. These are very hard and firm, screened from chaff, and nicely sorted in sizes. All the onion-sets mentioned above will be half price if over $\frac{1}{2}$ inch in diameter, or about that. The Yellow Danvers will winter over safely in some localities and on some kinds of soil. Where you want very early bunch onions they are sometimes planted in September—that is, in localities where they have tried September planting, and know it succeeds. Perhaps you ask, "Why not wait till spring with all of them?" First, because they are very much further advanced where they are in the ground over winter; secondly, most people have much more time to prepare the ground thoroughly, and do the work nicely, in the fall. Perhaps the winter onion-sets are the only ones that *always* succeed *everywhere*; and the price is now so low that everybody can afford to have them. Where onions are to be raised under glass or in greenhouses, plant them in September and move them into your hot-beds, cold-frames, or glass house just before the weather freezes up hard, or during open spells in the winter.

For prices on seeds mentioned above, see our seed catalog for the fall of 1894, sent free on application. Onion-sets by mail at 10 cts. per quart extra for postage.

Sow seven-top turnip this month. Seed, 10 lbs., 15c per lb.; 1 lb., 20c; oz., 5c; mail, 10c per lb. extra.

Winter rye, for fall sowing, 65c per bushel; extra for sack to ship it in.

While this severe and extended drouth prevails, it will be out of the question for us to ship any strawberry-plants except the Timbrell, which are in our plant-beds, and kept growing by watering.

CRIMSON CLOVER.

It is a little funny that this plant has been among our list of honey-plants for perhaps ten years past or more. It has been called Italian or scarlet clover. Seven or eight years ago I had a patch of it near the road, and it grew so rank and thrifty that farmers stopped to look at it, making many inquiries; and some of them insisted that it must be valuable for feed and for turning under; but somehow everybody seemed to be slow in testing it until within the past two or three years; and it just now

seems to promise wonderful things for the farmer. Some of the agricultural papers state that, if it is sown on fair soil during either August or September, 10 to 15 lbs. to the acre, it will make growth enough to stand the winter safely, and will be worth for plowing under, and nothing else, as much as several tons of manure next spring. And all this great boon is coming with little or no reference to it as a honey-plant. I have been watching anxiously its development until it seems a pretty well settled fact that it is certainly very valuable. The boom has had the effect of putting seed on the market till the prices are very low. A favorite method is to sow it broadcast among the corn, just at the last cultivating. Or you can put it on any ground that has been vacated by any sort of crop; or sow it among your raspberries, blackberries, etc., and turn it under by plowing a furrow or two up against the plants, when it gets rank enough in the spring. We are prepared to ship the seed promptly at the following greatly reduced prices: By mail, post-paid, 1 lb., 25 cts.; 10 lbs., by express, \$1.50; 1 bushel, 60 lbs., by freight or express, \$4.50; 1 bag, $2\frac{1}{2}$ bushels, by freight or express, \$10.00.

THE HONEY MARKET.

Comparing the reports of the season's honey crop with the market report of prices gives a vivid picture of the very depressing effect on prices of the close times through which we have been passing. Notwithstanding a very short crop, judging from reports, we have never known prices to be lower so early in the season. Last year those who got their honey to market early secured the best prices, as a rule. If times improve from now on, as we hope they will, the demand for honey, and price, must also improve in view of the short crop. Do not be in haste to sell at ruinously low prices what little honey you have secured, but help to tone up the market by a little more independence in asking a fair price for your product. With our present supply, and the limited demand, we can not buy any more of either comb or extracted for the present. We have over two tons of very thick and choice extracted, in 60-lb. cans, which is clover and basswood mixed, claimed by shippers to be more than half clover. Price for single can, 9c; per box of 2 cans, $8\frac{1}{2}$. Lots of 2 cases, 8c per lb.

Fancy white comb honey, mostly basswood, with or without cartons, 1-lb. sections, 24-lb. cases, 16c for less than a nine-case lot. By the crate of 9 cases, 15c per lb. Those wanting larger lots will do well to write us, as we know of lots in the hands of shippers which we could have shipped direct, thus saving one freight and the attendant risk in handling.

MORE ABOUT BARRELS FOR SHIPPING.

We received a large barrel of honey from Louisiana, which reached us leaking. As the shipper did not give exact weight we could not tell how much was lost, but probably over 50 lbs. We coopered the barrel, putting on one new hoop. It stood in our building several days without further leaking. We shipped to Mansfield, a short distance, requiring only one transfer and two days in transit. When it reached there, over two-thirds of the honey we started had leaked out. The barrel, when we started it, was in as good order as such a barrel could be. We do not blame the Southern producers for trying to get as cheap a package as they can for their honey, considering the low prices they get for it; but I fear many carry it too far, and use barrels which are not strong enough to hold honey. There are very few uses to which barrels are put that make such a heavy strain on their strength as shipping honey, which is almost 50 per cent heavier than water or other similar liquids. If you must use barrels to ship honey in, be sure they are strong enough, and well coopered, and waxed inside, to prevent leaking.

STURWOLD SHOW-CASES.

We have just made up a new lot of these cases, which you will find on page 30 of our catalog. You will find them a great help in working up a demand for honey in your home market, if placed in a conspicuous place in one of the leading grocery stores.

Price of the case complete, finished, plain glass, \$4.00. With front glass lettered with your name and address, 50 cts. extra. Cases shipped with glass in place, or packed separately, as you prefer. Cases in the flat, not finished, without glass, \$1.50; with glass, \$2.50. Upper and lower frames nailed and glued together at this price.